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**FINAL**

**SEMI-ANNUAL PROGRESS REPORT NUMBER 21**

**(Operating Period July 1 through December 31, 2005)**

**Prepared For:**

**Non-City Remedial Design/Remedial Action Settlers  
Wayne Reclamation & Recycling, Inc., Wayne Waste Oil Site  
Columbia City, Indiana**

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EPA Region 5 Records Ctr.



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## ACRONYMS AND ABBREVIATIONS

AST	Aboveground Storage Tank
B&N	Burgess & Niple, Incorporated
CLP	Contract Laboratory Program
DCE	dichloroethene
gpd	gallons per day
gpm	gallons per minute
HDPE	high-density polyethylene
IDEM	Indiana Department of Environmental Management
InSite	InSite, Incorporated
ISC-LT	Industrial Source Complex – Long-Term
lb.	pound
MWH	MWH Americas, Inc.
NFG	National Functional Guidelines
O&M	operation and maintenance
OM&M	operation, maintenance, and monitoring
Pace	Pace Analytical Services, Inc.
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
POTW	publicly owned treatment works
ppb	parts per billion
PRG	Preliminary Remediation Goal
QAPjP	Quality Assurance Project Plan
QC	quality control
RD/RA	Remedial Design/Remedial Action
scfm	standard cubic feet per minute
SE	Southeast
SVE	soil vapor extraction
U.S. EPA	United States Environmental Protection Agency
TCE	trichloroethene
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
v/v	volume per volume basis
VOC	volatile organic compound
VC	vinyl chloride
Weston	Roy F. Weston
WRR	Wayne Reclamation & Recycling

## 1.0 INTRODUCTION

This document is submitted on behalf of the Non-City Remedial Design/Remedial Action (RD/RA) Settlors. It is intended to summarize operations of the remediation system constructed by the Non-City RD/RA Settlors at the Wayne Reclamation & Recycling (WRR) Site (also known as the Wayne Waste Oil Site) located in Columbia City, Indiana for the reporting period of July 1 through December 31, 2005. Included in this document is a description of the system operation, assessment, and testing activities that have occurred during the reporting period, as well as the on-going evaluation of the remediation system performance. This document is organized as follows:

- *Section 2 Monitoring, Data Validation, and Field Work*
- *Section 3 Soil Vapor Extraction System*
- *Section 4 Air Sparging System*
- *Section 5 Groundwater Extraction System*
- *Section 6 Groundwater Pre-Treatment System*
- *Section 7 Off-Gas Treatment System*
- *Section 8 Conclusions and Recommendations*

This document is intended to supplement information presented in previous Semi-Annual Progress Reports.

### 1.1 BACKGROUND

Construction of the remediation system at the WRR Site took place between 1994 and January 1995. The remediation system was constructed to remove volatile organic compounds (VOCs) from soil and groundwater. The system includes:

- A 150-gallons-per-minute (gpm) design capacity groundwater extraction system, including a 1,600-foot-long, soil-bentonite cut-off wall (i.e., slurry wall).
- A groundwater treatment system consisting of an influent storage tank, an air stripping tower, and a 5,800-foot-long force main that delivers treated groundwater to the Columbia City publicly owned treatment works (POTW).
- A 2,400-standard-cubic-feet-per-minute (scfm) soil vapor extraction (SVE) system and a 100-scfm air sparging system (nominal rates).
- A 3,200-scfm off-gas treatment system, which was removed from service effective June 24, 1999.

A layout for the three primary components of the remediation system, including the groundwater recovery, SVE, and air sparging systems, are indicated on Figures 1, 2, and 3, respectively.

A Prefinal Inspection of the remediation system was held with the United States Environmental Protection Agency (U.S. EPA) on January 27, 1995. The Final Inspection with the U.S. EPA was conducted on May 18, 1995. The system was operated in startup/shakedown mode from January 1995 through September 1995, pending approval of the *Final Operation, Maintenance, and Monitoring Plan (Final OM&M Plan; Montgomery Watson, September 1995)*. U.S. EPA approval of the *Final OM&M Plan* was granted on September 27, 1995. In addition, U.S. EPA approval of the *Interim Remedial Action Report* (Montgomery Watson, August 1995) was granted on September 29, 1995.

Roy F. Weston (Weston) of Vernon Hills, Illinois (remediation system general

contractor) acted as system operator after the completion of system construction activities, from September 1995 to January 31, 1998. Weston subcontracted the majority of the OM&M activities to InSite, Incorporated (InSite) of Fort Wayne, Indiana. Montgomery Watson (system designer) was responsible for collecting air and water samples in accordance with the approved *Final OM&M Plan* during Weston's operation of the system. From February 1, 1998 until March 31, 2004, Montgomery Watson replaced Weston as the system operator and retained InSite to perform the day-to-day system operation. As of April 1, 2004, InSite was contracted directly by the Non-City RD/RA Settlors to operate, maintain, and monitor the WRR Site remediation system. MWH Americas, Inc. (MWH; formerly Montgomery Watson and Montgomery Watson Harza) continues to assist with the monitoring and optimization of system performance.

Additional information on the remediation system can be found in the following reports:

- *Final Design Evaluation* (Warzyn, November 19, 1993).
- *Interim Remedial Action Report* (Montgomery Watson, August 1995).
- *Final Operation, Maintenance, and Monitoring (OM&M) Plan* (Montgomery Watson, September 1995) and *Addendum* (Montgomery Watson, July 1999).
- *Final Operations and Maintenance Quality Assurance Project Plan (O&M QAPjP)* (Montgomery Watson, September 1995) and *Addendum* (Montgomery Watson, July 1999).
- *Technical Memorandum Number One* (Montgomery Watson, February 12, 1996).
- *Technical Memorandum Number Two* (Montgomery Watson, November 1996).
- *Semi-Annual Progress Report Number 3* (Montgomery Watson, August 1997).
- *Semi-Annual Progress Report Number 4* (Montgomery Watson, November 1997).

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- *Semi-Annual Progress Report Number 5* (Montgomery Watson, April 1998).
- *Semi-Annual Progress Report Number 6* (Montgomery Watson, September 1998).
- *Semi-Annual Progress Report Number 7* (Montgomery Watson, March 1999).
- *Semi-Annual Progress Report Number 8* (Montgomery Watson, August 1999).
- *Semi-Annual Progress Report Number 9* (Montgomery Watson, March 2000).
- *Semi-Annual Progress Report Number 10* (Montgomery Watson, October 2000).
- *Semi-Annual Progress Report Number 11* (Montgomery Watson, March 2001).
- *Semi-Annual Progress Report Number 12* (Montgomery Watson Harza, September 2001).
- *Semi-Annual Progress Report Number 13* (MWH, April 2002).
- *Semi-Annual Progress Report Number 14* (MWH, September 2002).
- *Semi-Annual Progress Report Number 15* (MWH, July 2003).
- *Hydrological Assessment Letter Report, January through July 2003* (MWH, August 2003).
- *Semi-Annual Progress Report Number 16* (MWH, September 2003).
- *Hydrological Assessment Letter Report, July through December 2003* (MWH, January 2004).
- *Semi-Annual Progress Report Number 17* (MWH, March 2004).
- *Semi-Annual Progress Report Number 18* (MWH, September 2004).
- *Semi-Annual Progress Report Number 19* (MWH, March 2005).
- *Semi-Annual Progress Report Number 20* (MWH, September 2005).

## **2.0 MONITORING, DATA VALIDATION, AND FIELD WORK**

Initial monitoring and optimization testing of the WRR Site remediation system commenced in early 1995, during the startup/shakedown mode of system operations. Additional monitoring and system optimization has continued through the year 2005. Monitoring and testing was conducted primarily to evaluate the performance of the remediation system in removing VOCs from soils and groundwater, as well as to address the monitoring and testing requirements set forth in the *Final OM&M Plan*. Summaries of the monitoring activities conducted, data validation report, and significant field events and activities are presented in the following sections.

### **2.1 SITE-SPECIFIC PRELIMINARY REMEDIATION GOALS**

Development of the groundwater and soil site-specific Preliminary Remediation Goals (PRGs) are detailed in Appendix C of the *Final OM&M Plan* (Montgomery Watson, September 1995) and *Final O&M QAPjP* (Montgomery Watson, September 1995). Soil PRGs are specified based on the thickness of soil column and area. Soil compliance monitoring will begin when it is determined that an area likely meets the soil site-specific PRGs, as indicated by groundwater detections less than the groundwater site-specific PRGs. The five constituents listed in the following table were noted in the *Final OM&M Plan* to be the principal contaminants of concern necessitating groundwater and soil remediation at the WRR Site. The table also lists the most conservative groundwater PRGs and soil PRGs for the entire soil column for the principal contaminants of concern.

Principal Contaminant of Concern	Groundwater PRG ( $\mu\text{g}/\text{L}$ )	Soil PRG for Entire Soil Column <sup>(1)</sup> ( $\mu\text{g}/\text{kg}$ )			
		SE Area - North	SE Area - South	AST Area	MW-7S
Vinyl Chloride (VC)	0.0283	37.1	25.2	2.6	1,987.0
Tetrachloroethene (PCE)	1.43	67.1	1,811.6	44.2	4,796.0
Trichloroethene (TCE)	2.54	19.7	804.6	17.6	664
cis-1,2-Dichloroethene (cis-1,2-DCE)	70	--	--	--	--
trans-1,2-Dichloroethene (trans-1,2-DCE)	100	--	--	--	--
1,2-Dichloroethene, Total (1,2-DCE)	--	186.3	8,578.4	184.7	4,219.0

Notes:

$\mu\text{g}/\text{L}$  = Micrograms per liter.

$\mu\text{g}/\text{kg}$  = Micrograms per kilogram.

SE = Southeast.

AST = Aboveground Storage Tank.

-- = No PRG developed for this constituent.

<sup>(1)</sup> = PRGs were also developed for a one-foot soil column. The appropriate PRG should be used.

## 2.2 MONITORING

The primary monitoring activities conducted for the WRR Site remediation system include:

- The SVE system effluent (equivalent to the former air treatment system influent) samples are collected and analyzed for VOCs on a monthly basis. Laboratory analytical results of the SVE effluent sampling are used in air dispersion calculations as part of the on-going assessment of cumulative risks for exposure to carcinogens. SVE sampling activities have been temporarily discontinued as of November 13, 2005, following the temporary suspension of the SVE (and AS) system. The assessment of the current effect the SVE system has on the removal of VOCs from the vadose zone is expected to be completed in April 2006 at which time the system will be restarted.

- Samples of both the influent to and effluent from the groundwater treatment system are collected monthly and analyzed for VOCs. The effluent samples are also analyzed for total metals, inorganics, and polychlorinated biphenyls (PCBs) during the expanded sampling event in October of each year. Laboratory analytical results from the groundwater treatment system sampling are used to monitor groundwater treatment system efficiency, and to provide effluent water quality information to the Columbia City POTW. During this reporting period, an expanded sampling event was conducted.
- Groundwater samples from recovery wells are collected and analyzed for VOCs on a periodic basis. In an agreement with the U.S. EPA and Indiana Department of Environmental Management (IDEM) on October 31, 2003, recovery wells RW-1, RW-3, RW-4, and RW-5 are to be sampled for VOCs annually for three years, during or near the time of the October sampling event. Laboratory analytical results from recovery well sampling are used to monitor changes in aquifer groundwater concentrations and to assess VOC mass removal rates from the aquifer. Samples were collected from the recovery wells during this reporting period.
- Semi-annual groundwater sampling and analyses are conducted using the WRR Site monitoring well network. Typically, the semi-annual sampling is conducted in April and October of each year. Samples are analyzed for VOCs and metals. Laboratory analytical results from groundwater sampling are used to assess effectiveness of the remediation system operations and evaluate the progress toward attainment of remedial goals. During October 2005, samples were collected from 14 WRR Site monitoring wells and analyzed for VOCs and metals.

- Semi-annual groundwater elevation measurements are collected from 28 of the WRR Site's groundwater monitoring wells and piezometers, not including the landfill wells monitored by Columbia City and the ten WRR Site recovery wells. Typically, the semi-annual sampling is conducted in April and October of each year. These data are used to evaluate groundwater flow patterns across the site. During October 2005, groundwater elevation readings were collected from the designated monitoring wells and piezometers.
- Monthly groundwater elevation measurements are collected from eight groundwater monitoring wells to evaluate the zone of hydraulic influence created by the groundwater remediation system and to assess horizontal and vertical hydraulic gradients within the SE Area.
- Annually, specific Columbia City municipal drinking water wells (Municipal Well Numbers 7 and 8 [referred to as PW-7 and PW-8, respectively]) are sampled during the expanded October sampling event; therefore, they were sampled during this reporting period.
- During this reporting period, groundwater wells located on or adjacent to the landfill (GM-1 through GM-4) were sampled by Burgess & Niple, Incorporated (B&N) of Columbus, Ohio. Their report (Appendix A) provides useful data for comparison to groundwater monitoring results from closely associated wells on the WRR Site.

The results from the above monitoring activities are discussed in the following sections of this report.

### **2.3 DATA VALIDATION SUMMARY**

Groundwater, air, and associated quality control (QC) samples were collected from the Wayne Reclamation & Recycling Site in Columbia City, Indiana between July and December 2005. The water samples were analyzed by Pace Analytical Services, Inc. (Pace) of Indianapolis, Indiana for one or more of the following parameters: volatile organic compounds (VOCs) by United States Environmental Protection Agency (U.S. EPA) Method SW-846 8260B; dissolved metals (arsenic, barium, cadmium, chromium, lead, nickel, and zinc) by U.S. EPA Method SW-846 6010B; total suspended solids (TSS) by U.S. EPA Method 160.2; ammonia by U.S. EPA Method 350.1; total Kjeldahl nitrogen (TKN) by U.S. EPA Method 351.2; nitrogen as nitrate and nitrite by U.S. EPA Method 353.2; total solids by U.S. EPA method 160.3; phosphorus by U.S. EPA Method 365.2; biological oxygen demand (BOD) by U.S. EPA Method 405.1; chemical oxygen demand by U.S. EPA Method 410.4; phenolics by U.S. EPA Method 420.2; polychlorinated biphenyls (PCBs) by U.S. EPA Method SW-846 8082 and total cyanide by U.S. EPA Method 335.3. The water samples were also analyzed by Pace of Lenexa, Kansas for oil and grease by U.S. EPA Method 1664 and surfactants by U.S. EPA Method 425.1. Additionally, air samples were analyzed for VOCs by Pace of Minneapolis, Minnesota by U.S. EPA Method TO-14.

Laboratory analytical results were evaluated in accordance with the U.S. EPA Contract Laboratory Program (CLP) National Functional Guidelines (NFG) for Organic Data Review (October 1999), U.S. EPA CLP NFG for Inorganic Data Review (October 2004), and the analytical methods. The analytical data were reviewed and qualified based on the results of the data evaluation parameters and/or the QC sample results provided by the laboratory. The complete data validation report is included as Appendix B. The analytical data that did not meet the QC criteria were flagged by a "J" as estimated for those compounds. Based on the results of this data validation, all data are considered valid and complete as qualified.

## **2.4 FIELD WORK**

The major field activities conducted at the WRR Site during the reporting period are summarized in Appendix C. Activities during this reporting period included various equipment repairs and maintenance tasks.

### **3.0 SOIL VAPOR EXTRACTION SYSTEM**

#### **3.1 SYSTEM DESCRIPTION**

The SVE system was constructed to remove VOCs from the vadose (unsaturated) zone. The horizontal configuration of the SVE well system is presented on Figure 2. The system consists of 41 SVE wells in the SE Area and 18 SVE wells in AST Area. In the SE Area of the WRR Site, the SVE wells are grouped together into one of six branch lines, with six to eight SVE wells attached to each line. As shown on Figure 2, the six branch lines are designated as Branches A, B, C, D, E, and F. The six branch lines connect to one main trunk line that conveys extracted vapors to the on-site treatment building via vacuum blowers housed within the building. Operation of groups of SVE wells is currently controlled manually by a valve at the head of each branch line. In the AST Area, each SVE well is connected via underground piping to one of two branch lines (Branches G and H; Figure 2) that convey extracted vapors to the treatment building. Automatic control valves located in the treatment building control operation of the two AST Area branches. Additionally, the operation of individual SVE wells can be controlled manually by a shut-off valve located at each well.

In the SE and AST Areas, cycling of the SVE branch lines began on May 1, 1998. The cycling applies vacuum to certain branch lines while others are dormant. After a specified period of time, the dormant lines are placed under vacuum while those that were active are turned off. During current cycling procedures, effective as of September 17, 2001, two of the six branch lines are operated simultaneously in the SE Area. The set of two branch lines operating is rotated approximately once per week. In the AST Area, operations of Branch Lines G and H were rotated approximately once per week. In the beginning of October 2002, the operation of Branch H was suspended. The SVE (and AS) system has been temporarily suspended as of November 13, 2005 to assess the current effect the SVE system has on removal of VOCs from the vadose zone. The system is expected to be restarted in April 2006.

### **3.2 MONITORING RESULTS**

Results of the SVE system monitoring conducted during this reporting period indicate:

- During the period of July through November 13, 2005, the SVE system was operational for approximately 99.2 percent of the time (i.e., percent of total hours available). Downtime events were related to standard, regularly scheduled OM&M activities and special maintenance and repairs. As of November 13, 2005 the SVE system was temporarily suspended.
- Area air flow rates were collected each month from July through October 2005. The SE Area flow rate averaged approximately 560 scfm (total average of six branch line measurements made in SE Area) and the AST Area flow rate averaged approximately 218 scfm (Branch Line G). Flow rate measurements collected during this reporting period are summarized in Table 1.
- Laboratory analytical data from Summa canister samples collected in October 2005, as well as historical data, are summarized in Table 2. Vapor samples are collected with and without air delivery to the sparge wells as a means of measuring the contribution of the air sparge system to VOC removal.

### **3.3 PROGRESS TOWARD REMEDIAL OBJECTIVES**

The primary objective of the SVE system operation is to remove VOCs from soil in order to attain vadose zone soil site-specific PRGs, as indicated in the *Final OM&M Plan* and *Final O&M QAPjP*. Soil compliance monitoring will begin when it is determined that an area likely meets the soil site-specific PRGs, as indicated by groundwater detections less than the groundwater site-specific PRGs.

Based on laboratory analytical results from SVE system effluent air samples collected during the reporting period, it is estimated that approximately 11,839 pounds (lbs.) of VOCs have been removed via the SVE system from vadose zone soils to date, with 86 lbs. removed from July through October 2005. The main VOC constituents being removed in the SE and AST Areas are TCE and cis-1,2-DCE. Initial mass removal rates observed at the commencement of SVE system operations were approximately 83 lbs. of total VOCs per day. As of October 2005, removal rates for the SVE system were approximately 0.47 lbs. of total VOCs per day, approximately 0.5 percent of initial removal rates. The trend in VOC concentrations for the combined effluent air of the SVE, air sparge, and groundwater treatment systems is stable and is shown on Figure 4. A similar trend can be observed in the Summa canister results shown on Figure 5. With the air sparge system turned on, VOCs removed are slightly higher than with the air sparge system turned off.

Groundwater monitoring results are presented in Table 3. For the wells that were monitored in October 2005 within the SE Area:

- Two or more VOCs (including cis-1,2-DCE and VC) were greater than PRGs, with fluctuating concentrations that increased at MW-10S, and concentrations have decreased at MW-83AS and MW83AD.
- Two or more VOCs (including cis-1,2-DCE and VC) had a decrease in concentrations at MW-3S and MW-83DS.
- One or more VOCs exceeding the PRGs (including cis-1,2-DCE, and VC) had decreases in concentrations at MW-11S and MW-13S. TCE concentrations increased slightly at MW-11S and MW-13S.

For the wells that were monitored in October 2005 within the AST Area:

- VOCs were less than site-specific PRGs in MW-14S. Only 1,1-dichloroethane and 1,1,1-trichloroethane were detected.
- Six VOCs (including cis-1,2-DCE, VC, TCE, and PCE) were greater than PRGs in MW-9S, with an increase in concentrations.
- MW-15S contained TCE above the site-specific PRG, the concentration has fluctuated and has decreased.

While constituents in groundwater are still present at concentrations greater than site-specific PRGs, the SVE system typically removes VOCs at 0.5 percent of initial removal rates, and the trend has been stable for approximately 7 years (Figure 4). As such, options for continued use of the SVE system are being evaluated and the system is currently not operating (suspended on November 13, 2005) and is expected to be restarted in April 2006. This non-operational period will be used to evaluate vadose zone conditions and the effectiveness of the SVE system.

## 4.0 AIR SPARGING SYSTEM

### 4.1 SYSTEM DESCRIPTION

The air sparging system was constructed to facilitate removal of VOCs from soils and groundwater. The air sparging system is intended to work in combination with the SVE and groundwater collection systems to remove VOCs from the subsurface. The system consists of 40 sparge well clusters located in the SE Area of the WRR Site (Figure 3). A sparge well cluster is positioned adjacent to each SVE well. Compressed air is delivered from the treatment building to each sparge well through 2-inch diameter subgrade high-density polyethylene (HDPE) piping. As shown on Figure 3, Branch Lines A, B, C, D, E, and F leave the trunk line to feed the sparge wells. Operation of each branch line is controlled by a valve at the junction of the line with the primary air flow pipe.

Each sparge well cluster consists of one shallow and one deep well. The shallow/deep cluster was installed to provide treatment of soils above and below a thin clay layer located approximately 20 to 25 feet below the ground surface. The screen interval for each shallow sparge well is positioned immediately above the thin clay layer. The deep sparge wells are screened at the base of the upper aquifer. Each well is instrumented with an air flow rotometer, ball valve, and pressure gauge.

Effective September 17, 2001, delivery of compressed air to the deep sparge wells was discontinued. It is believed that the deep area is experiencing anaerobic degradation of VOC impacts; therefore, discontinuing the deep air sparging may increase VOC degradation.

Typically, two of the six sparge branch lines are operated at a time, corresponding to the two operating SVE branch lines. The lines are rotated approximately once per week, consistent with the rotation of the SVE lines, with two lines undergoing sparging while four lines are dormant. During operation, air is delivered to the sparging system for four hours, followed by a four-hour period of inoperation. On November 13, 2005, the

air sparging system was suspended to evaluate the current effect the SVE system has on VOC removal from the vadose zone. The system is expected to be restarted in April 2006.

#### **4.2 MONITORING RESULTS**

Results of the air sparging system monitoring conducted during this reporting period indicate:

- During the period of July through October 2005, the air sparging system was operational for approximately 99.2 percent of the total hours available. Downtime events were primarily related to standard, regularly scheduled OM&M activities and special maintenance and repairs. The system was suspended on November 13, 2005.
- As a means of measuring the contribution of VOC removal by air sparging, vapor samples have been collected from the effluent of the SVE system both with and without air delivery to the sparge wells. Vapor samples were collected using Summa canisters during the October 2005 semi-annual sampling event. The results associated with this sampling effort are summarized in Table 2.
- Operation of the sparge system will continue without air sparging to the deep wells, to enable additional data to be gathered regarding anaerobic VOC degradation.

#### **4.3 PROGRESS TOWARD REMEDIAL OBJECTIVES**

The primary remedial objective of the air sparging system is the removal of dissolved-phase VOCs from the saturated zone in the SE Area of the WRR Site, located within the confines of the slurry wall. VOC analytical results for the air samples collected semi-annually via Summa canisters are presented in Table 2, and semi-annual

groundwater sampling results are presented in Table 3. Testing results collected to date suggest that the air sparging system is supporting the remedial objective, as discussed below.

A historical representation of the concentration of total VOCs in the SE Area, as recorded during vapor sampling, is provided in Figure 5. The graph depicts the effect of the air sparge system on VOC removal in this area. Review of the laboratory analytical results indicate that the air sparge system's impact on VOC removal in the SE Area has varied throughout system operations, but that the air sparge system continues to enhance VOC removal. The overall trend for the concentration of VOCs removed is becoming stable.

For the wells that monitor the SE Area, the groundwater data is briefly summarized under Section 3.3.

As with the SVE system, the VOC removal rate for the air sparge system has decreased significantly over time, and the trend has been stable for three years (Figure 5). Therefore, operation of the air sparge system was temporarily suspended as of November 2005 in conjunction with the SVE system suspension to evaluate its effectiveness. The system is expected to be restarted in April 2006.

## **5.0 GROUNDWATER EXTRACTION SYSTEM**

### **5.1 SYSTEM DESCRIPTION**

The groundwater extraction system was constructed to capture and control groundwater impacted with VOCs. The groundwater extraction system consists of ten groundwater recovery wells installed in three areas of the WRR Site as follows: three recovery wells in the AST Area (RW-1 through RW-3), one recovery well in the monitoring well MW-7S area (RW-4), and six recovery wells in the SE Area (RW-5 through RW-10) (Figure 1). The extraction system also employs the use of a soil-bentonite cut-off wall (i.e., slurry wall), constructed to reduce the pumping rate necessary to control groundwater flow in the SE Area. Extracted groundwater is pumped to the on-site treatment building through underground HDPE piping.

### **5.2 MONITORING RESULTS**

Results of the groundwater extraction system monitoring conducted during this reporting period indicate:

- During the period of July through December 2005, the groundwater extraction system was operational for approximately 99.2 percent of the time (i.e., percent of total hours available). Primary downtime events were related to routine cleaning of recovery pumps, routine and annual plant maintenance, draining and cleaning of the knockout tank, cleaning and repair of the flow meters, and other special maintenance and repairs.
- A summary of system flow rates is included in Table 4. The maximum sustained groundwater recovery rate during the reporting period was approximately 113 gpm in October 2005. During the reporting period, a total of 21,372,700 gallons of groundwater were recovered and treated. The largest total monthly flow was reported at

4,999,500 gallons, for the month of October 2005. The highest average daily recovery rate during the reporting period was 169,800 gallons per day (gpd), which was also reported during the month of October 2005. Figure 6 is a summary of the cumulative and average daily groundwater recovery rates. As of December 2005, a cumulative total of 261,872,741 gallons of groundwater had been recovered, treated, and discharged to the Columbia City POTW.

- On-going, routine operation and maintenance activities are focusing on recovery well pump cleaning and/or repair, and recovery pipe cleaning as necessary to optimize groundwater extraction system performance.
- Water level elevation data collected during the reporting period is used to evaluate the groundwater table drawdown. These data are provided in Table 6 (monitoring well construction details are included in Table 5). Groundwater contour maps are presented as Figures 8-1 through 8-4, 8-6, and 8-7. Figure 8-4 illustrates a representation of the groundwater elevations observed across the entire WRR Site during October 2005, and the apparent horizontal groundwater flow patterns. Comparison of the October 2005 groundwater elevations illustrated in Figure 8-4 with the October 2005 groundwater elevations of the landfill wells in the B&N report (see Table 2 of the B&N report, included as Appendix A) shows that they correspond.
- Figure 8-5 summarizes recent groundwater sampling analytical results from monitoring wells, recovery wells, and the treatment system influent.

- Historical laboratory analytical results from the annual sampling of the Columbia City municipal drinking water wells located to the north of the WRR Site can be found in Tables 7 and 8. Sampling of the municipal drinking water wells was conducted during this reporting period. The historical data indicates that no detectable concentrations of constituents attributable to the WRR Site have been identified in samples from the municipal wells.
- During this reporting period, a concentration of 1.4 µg/L of cis-1,2-DCE was reported in the sample collected from Columbia City municipal well PW-8 on October 18, 2005. Cis-1,2-DCE was not detected in the field duplicate for this sample nor has this compound been historically detected in the samples from PW-8. On January 13, 2006, PW-8 was re-sampled for laboratory analysis of VOCs. VOCs were not detected in this sample. On January 16, 2006, Pace reissued the laboratory results for the October 18, 2005, sample with the following note: "compound result biased high due to carryover from previous analyses." Therefore, the result for cis-1,2-DCE for the October 18, 2005 sample is considered to be an artifact from previous analyses. For future analytical work, the laboratory will not analyze samples from the Columbia City municipal wells concurrent with other samples submitted from the Site.

### **5.3 PROGRESS TOWARD REMEDIAL OBJECTIVES**

The primary remedial objectives of the groundwater extraction system are to remove dissolved-phase contamination from the upper aquifer on site, thereby restricting the potential off-site migration of dissolved-phase constituents to the Blue River or Columbia City municipal well field. Mass removal rates from the groundwater extraction system

have ranged from approximately 0.46 to 2.91 lbs. of total VOCs removed per day during this reporting period.

Groundwater elevation data indicates that the slurry wall/groundwater extraction system is effectively maintaining an inward horizontal gradient in the SE Area. Monthly water elevations collected during the reporting period indicate the hydraulic head levels are consistently lower inside the slurry wall as compared to the head levels outside the wall. For example, the December 2005 elevations within the confines of the slurry wall are more than 3.4 feet lower than water elevations immediately outside the slurry wall (based on monitoring wells MW-11S and MW-13S, Table 6 and Figure 8-1).

OM&M activities, including on-going recovery pump cleaning, are conducted to increase groundwater system recovery rates to maintain an upward gradient in the SE Area. Based on the historical observations of groundwater extraction system performance, maintenance of the groundwater extraction system will be conducted frequently (i.e., approximately once per quarter) in order to maintain hydraulic control. Review of the groundwater elevation data indicates that an upward gradient was maintained in the SE Area during this reporting period.

The monitoring wells currently included in the semi-annual or annual sampling program, per the requirements of the *Final OM&M Plan*, are MW-1D, MW-3S, MW-4S, MW-7S, MW-9S, MW-10S, MW-11S, MW-14S, MW-15S, MW-16S, MW-83AS, MW-83AD, and MW-83B. Monitoring wells MW-13S and MW-83DS were added to the annual OM&M monitoring program per the July 11, 2002 Site Progress Meeting. During the reporting period, monitoring wells MW-1D, MW-3S, MW-4S, MW-7S, MW-9S, MW-10S, MW-11S, MW-13S, MW-14S, MW-15S, MW-16S, MW-83AS, MW-83AD, MW-83B, and MW-83DS were sampled.

A summary of monitoring well VOC and metals analytical data collected to date is included in Table 3. Recent monitoring well VOC analytical results are also included in

Figure 8-5. Copies of laboratory analytical reports are available upon request. Results for the monitoring wells in the SE and AST Areas are discussed in Section 3.3 and 4.3, as part of the assessment of the SVE and air sparge systems. For the remaining wells, for which the remedy is only groundwater treatment, the results are summarized below:

Recovery Well RW-4 Area:

- As of October 2005, cis-1,2-DCE in MW-7S is greater than the PRG, with a slight decreasing trend.
- As of October 2005, VC in MW-4S is greater than the PRG, with a slight decreasing trend.
- As of October 2005, cis-1,2-DCE at RW-4 is greater than the PRG, with a slight decreasing trend.

Recovery Wells in AST Area:

- As of October 2005, VOCs (cis-1,2-DCE and VC) at RW-1 have decreased, with cis-1,2-DCE concentrations lower than the PRG.
- As of October 2005, VOCs (mainly cis-1,2-DCE, TCE, and VC) are greater than the PRGs at RW-3 with slight increases in concentrations.
- As of October 2005, VOCs in the monitoring wells in this area (mainly TCE at MW-15S and cis-1,2-DCE, TCE, and VC at MW-16S) are also greater than the PRGs with minor fluctuations with a slight increase in some of the concentrations.
- As of October 2005, concentrations of VOCs at MW-9S increased by an order of magnitude compared with the data obtained in 2003 and 2004.

- As of October 2005, no VOCs were greater than PRGs at MW-14S, but TCE and VC have occasionally exceeded the PRGs.

Recovery Wells in Southeast Area

- As of October 2005, cis-1,2-DCE, TCE, and VC were greater than the PRGs at wells RW-6 through RW-10, which were last sampled in 2001. There is no clear trend related to these results.
- As of October 2005, cis-1,2-DCE, TCE, and VC were greater than PRGs at RW-5, but the trend appears fluctuate with a slight decrease in concentrations.
- As of October 2005, based on the summaries in Sections 3.3 and 4.3, the concentrations of VOCs at the monitoring wells (MW-3S, MW-10S, MW-11S, MW-13S, MW-83AS, and MW-83AD) have generally decreased slightly..

A summary of historic recovery well VOC analytical data is included in Table 9 (recovery well construction details are included as Table 10), with the most recent analytical data for each recovery well included on Figure 8-5. The most highly impacted groundwater was historically and is still being removed from recovery wells located within the confines of the slurry wall (RW-8, RW-9, and RW-10).

## 6.0 GROUNDWATER PRE-TREATMENT SYSTEM

### 6.1 SYSTEM DESCRIPTION

The groundwater pre-treatment system is designed to remove VOCs from extracted groundwater, prior to discharge to the Columbia City POTW. Groundwater extracted from the WRR Site's ten groundwater recovery wells is initially pumped to an influent storage tank for solids settling and equalization. The equalized water is transferred through a bag filter to the top of an air stripping tower via electric transfer pumps. Water cascades downward through the tower packing, while air flows upward from near the tower base, inducing liquid-to-gas mass transfer of VOCs from the groundwater. The treated water drains from the tower into an effluent sump, which is pumped via a dedicated force main to the Columbia City POTW.

### 6.2 MONITORING RESULTS

During the period of July through December 2005, the groundwater pretreatment system was operational 99.2 percent of the time (i.e., percent of total hours of available). Primary downtime events were related to on-going routine cleaning activities and maintenance, and special maintenance and repairs.

Monthly analytical results of groundwater influent and treated effluent are summarized in Tables 11 and 12 and Figure 7. The air stripping tower has consistently removed VOCs prior to discharge to the Columbia City POTW. Total VOC concentrations in air stripping tower influent have fluctuated from as low as 416 µg/L to as high as 3,274 µg/L (in December 1995 and February 1996, respectively), since commencement of treatment system operations. Influent groundwater VOC concentrations can vary over time, based on a variety of factors including recovery well cycling, rainfall events, and water levels. The influent groundwater total VOC concentrations during this reporting period began at 748.5 µg/L in July 2005 and ended at 2,847.1 µg/L in December 2005 (shown in Table 11 and summarized on Figures 7 and 8-5). The average total VOC concentration

removed during the reporting period was approximately 1,943 µg/L. Average groundwater contaminant mass removal rates since the commencement of remediation system operations have ranged from approximately 0.13 to 13.2 lbs. per day of total VOCs. For this reporting period, the average groundwater contaminant mass removal rate is 1.91 lbs. of total VOCs per day, based on an average flow rate of 116,180 gpd and an average total VOC concentration removed of 1,943 µg/L. The mass removal rates for specific VOCs are provided in Table 15. The total mass removed during this period is approximately 349 lbs., and the total to date is an estimated 2,625 lbs.

### **6.3 PROGRESS TOWARD REMEDIAL OBJECTIVES**

Laboratory analytical results of the groundwater treatment system monthly effluent sampling, conducted in accordance with the discharge agreement (i.e., the agreement in place prior to February 1, 1998) with the Columbia City POTW, are included in Tables 11 and 12. Analytical results have indicated that low levels of both VOCs and inorganic compounds are present in the treated groundwater discharged to the Columbia City POTW. Monthly groundwater treatment system sampling consists of influent and effluent sampling for VOCs. Additional non-VOC parameters are analyzed in samples collected during the annual sampling event conducted in October of each year (Table 12).

## 7.0 OFF-GAS TREATMENT SYSTEM

### 7.1 SYSTEM DESCRIPTION

The off-gas treatment system was constructed and operated to remove VOCs from the off-gases of the air stripping tower and the SVE system prior to discharge to the atmosphere. On June 24, 1999, air treatment was discontinued; however, monthly air sampling continues to be conducted on the effluent air stream as a means of monitoring potential risk levels associated with the untreated air stream.

Upon entering the treatment building, the combined air stream of the air stripping tower and the SVE system is drawn through an air filter and moisture separator by two blowers connected in parallel. After exiting the blowers, the air stream passes through a heat exchanger prior to discharge to the atmosphere.

### 7.2 MONITORING RESULTS

Monitoring conducted to date, including the monthly SVE system effluent sampling (which includes air stripping system off-gases), indicate:

- Monthly effluent vapor concentrations have decreased by more than one order of magnitude from the beginning of system operations in early 1995 to December 2005. Total VOCs in the air stream have dropped from approximately 83,300 parts per billion (ppb) on a volume per volume basis (v/v) in March 1995 to 670 ppb (v/v) in December 2005. During the same time period, VC concentrations have decreased from approximately 1,900 ppb (v/v) to 344 ppb (v/v), TCE concentrations have decreased from 28,000 to 224 ppb (v/v), and cis-1,2-DCE concentrations have decreased from approximately 40,000 to 1,300 ppb (v/v). The historic monthly air treatment system influent and effluent laboratory analytical results are summarized on Table 13 and on Figure 4. Table 13 also includes the monthly

effluent-only sample results collected since the air treatment system was discontinued on June 24, 1999.

- Calculations have been conducted using the VOC concentrations of off-gas vapor concentrations to assess hypothetical risk levels. Results of the effluent sample analyses indicate hypothetical risk levels to be less than the cumulative risk action level of  $1\times 10^{-6}$  (representing a risk of one in one million exposed) during this reporting period, with the exception of August 2005. During August 2005 the hypothetical risk level was calculated at  $1.15E-06$ . Current and historical air risk calculations are provided in Table 14 and the results for this reporting period are also reported on Table 13.

### **7.3 PROGRESS TOWARD REMEDIAL OBJECTIVES**

The primary objective of the continued on-going off-gas air monitoring is to ensure that the cumulative life-time cancer risk at the WRR Site boundary remains less than the cumulative risk action level of  $1\times 10^{-6}$ . To verify compliance with this objective, air dispersion calculations were completed to determine the maximum concentrations at receptor locations outside the site boundary. The Industrial Source Complex - Long-Term (ISC-LT) model was used for the purpose of modeling the dispersion of the effluent from the soil remediation system (Appendix D). The maximum concentrations determined by the air modeling study were multiplied by unit risk factors to estimate the excess carcinogenic risk posed by the hypothetical emissions through the inhalation route. The unit risk factors used in this study were developed from toxicity values included in U.S. EPA's *Integrated Risk Information System*, U.S. EPA's *Health Assessment Summary Tables* (Annual FY-1995), and information provided by the U.S. EPA Environmental Criteria Assessment Office. The unit risk factors conservatively assume a chronic exposure to the chemicals for 24 hours a day, 365 days a year, for a 70-year lifetime. In this Progress Report, references to cancer risk and

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cancer risk estimates refer to the estimated potential risks as indicated by the use of ISC-LT air dispersion modeling and are not meant to represent or suggest actual risks.

Air dispersion calculations using the off-gas air data indicate only one exceedance of the  $1 \times 10^{-6}$  action level occurred during this reporting period. Though active air treatment was discontinued on June 24, 1999, monthly effluent air sampling and risk calculations will continue. Air treatment will be reactivated should the results from two consecutive monthly air samples indicate cumulative risks in excess of  $1 \times 10^{-6}$ .

## **8.0 CONCLUSIONS AND RECOMMENDATIONS**

Overall remediation system mass removal calculations indicate that, since inception of treatment system operations, approximately 14,463 lbs. of total VOCs have been removed by the SVE and groundwater treatment systems. Of this, approximately 82 percent (or 11,838 lbs.) is attributed to operation of the SVE and air sparge systems, and approximately 16 percent (or 2,625 lbs.) is attributed to the groundwater extraction system. Additionally, initial contaminant mass removal rates from the entire remediation system were approximately 88 lbs. of total VOCs per day during the startup phase of system operations. This removal rate has decreased to approximately 2.38 lbs. of total VOCs per day, as of this reporting period. Figure 9 represents a summary of overall VOC removal rates. Figure 10 illustrates the cumulative total VOCs removed from the WRR Site. Table 15 provides the removal rates for specific VOCs for the SVE and air stripper portion of the groundwater treatment systems, taking into account the average air flow rates and water flow rates collected during this reporting period.

The following recommendations, unless otherwise indicated by the U.S. EPA, will be implemented to improve treatment system performance:

- Continue with the on-going standard OM&M of the remediation system components to continue progress toward achieving the remedial action objectives.
- Continue monthly groundwater treatment system influent and effluent sampling for VOCs, per the discharge agreement with the Columbia City POTW.
- Continue with the on-going recovery well cleaning, pump repair and/or replacement, and groundwater recovery pipe cleaning as needed to optimize groundwater recovery efficiency and maintain effective

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hydraulic control. Also, perform annual cleaning of the discharge line to the POTW.

- During the next reporting period, operation of the SVE and air sparge systems will remain suspended in order to gather data that will aid in assessing the progress of vadose zone VOC removal. The SVE and air sparge systems will be off for six months (November 2005 to April 2006). Semi-annual monitoring in April will be conducted after re-starting the systems.

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## Tables

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**Table 1**  
**Summary of Soil Vapor Extraction Air Flow Rates from the SE and AST Areas**  
**July through December 2005**  
**Wayne Reclamation & Recycling**

<b>DATE TESTED</b>	<b>AIR FLOW (scfm)</b>	
	<b>SOUTHEAST AREA</b>	<b>AST AREA</b>
7/15/2005	740	330
8/26/2005	810	280
9/29/2005	900	340
10/12/2005	910	360
11/3/2005 *	0	0
12/1/2005 *	0	0
<b>AVERAGE FLOW:</b>	560	218
<b>MAXIMUM FLOW:</b>	910	360
<b>MINIMUM FLOW:</b>	0, 740	0, 280

**Notes:**

AST = Aboveground Storage Tank.

Flow measurement reported in standard cubic feet per minute (scfm).

All flow measurements are approximate.

Vacuum and flow measurements at the individual soil vapor extraction wells were suspended as of October 2002.

The operation of Branch Line H in the AST Area was suspended in October 2002.

\* The soil vapor extraction (SVE) and air sparge (AS) systems were temporarily shut down on November 13, 2005 for assessment of the vadose zone and are expected to be restarted in April 2006.

**Table 2**  
**Summary of Summa Canister Sampling for Soil Vapor Extraction Lines**  
**Wayne Reclamation & Recycling**

CONSTITUENT (ppb[v/v])	SOUTHEAST AREA													
	BRANCHES A - F													
	AS-ON 1/9/1996	AS-ON 2/15/1996	AS-ON 2/16/1996	AS-ON 2/18/1996	AS-ON 11/25/1996	AS-OFF 11/27/1996	AS-ON 9/3/1997	AS-OFF 9/5/1997	AS-ON 11/18/1997	AS-OFF 11/21/1997	AS-ON 4/21/1998 *	AS-OFF 4/28/1998	AS-ON 10/14/1998	AS-OFF 10/16/1998
1,1-Dichloroethane	230	230	300	180	120	81	88	82	98	92	20	19	70	73
cis-1,2-Dichloroethene	9,600	6,800	6,600	6,400	5,300	3,700	2,900	3,000	4,400	4,300	830	1,000	3,300	3,500
trans-1,2-Dichloroethene	850	460	540	480	490	340	370	380	460	460	71	74	280	360
4-Ethyltoluene	<84	<72	<72	<72	<36	<34	<17	<34	<36	<30	<12	<12	<25	<25
Tetrachloroethene	670	470	470	470	450	370	370	370	240	220	56	100	450	270
1,1,1-Trichloroethane	1,300	810	770	700	520	340	280	290	270	290	47	51	280	190
Trichloroethene	9,100	8,600	7,200	7,100	4,000	3,000	2,800	2,800	3,800	3,500	330	540	2,500	2,900
1,2,4-Trimethylbenzene	<84	<72	<72	<72	<36	<34	<17	<34	<36	<30	13	<12	<25	<25
1,3,5-Trimethylbenzene	<84	<72	<72	<72	<36	<34	<17	<34	<36	<30	<12	<12	<25	<25
Vinyl Chloride	<84	<72	240	230	61	<34	130	200	89	56	85	<12	<25	<25
Xylenes, Total	<84	<72	<72	<72	<36	<34	<17	<34	<36	<30	23	14	<25	<25
Soil Vapor Extraction Wells:	1 - 40D													

**Notes:**

Results are reported in parts per billion on a volume per volume basis (ppb[v/v]) for primary detected constituents, analyzed via United States Environmental Protection Agency Method TO-14.

AS = Air sparging system (on or off).

\* As of May 1, 1998, began to cycle operation of soil vapor extraction branches.

**Bold** = Analyte detected greater than the laboratory reporting limit.

< = Not detected greater than the reporting limit provided.

The soil vapor extraction (SVE) and air sparge (AS) systems were temporarily shut down on November 13, 2005 for assessment of the vadose zone and are expected to be restarted in April 2006.

**Table 2**  
**Summary of Summa Canister Sampling for Soil Vapor Extraction Lines**  
**Wayne Reclamation & Recycling**

CONSTITUENT (ppb[v/v])	SOUTHEAST AREA BRANCHES A - F																	
	AS-ON 4/26/1999	AS-OFF 4/13/1999	AS-ON 12/14/1999	AS-OFF 12/21/1999	AS-ON 4/18/2000	AS-OFF 4/29/2000	AS-ON 10/6/2000	AS-OFF 10/10/2000	AS-ON 4/27/2001	AS-OFF 4/23/2001	AS-ON 9/29/2001 *	AS-OFF 10/31/2001	AS-ON 4/23/2002	AS-OFF 4/26/2002	AS-ON 10/23/2002	AS-OFF 10/28/2002		
1,1-Dichloroethane	14	5	47	38	17	29	49	32	<6.9	<140	<140	<130	14	10	<140	<130		
cis-1,2-Dichloroethene	410	210	1,500	1,300	580	1,400	2,200	1,300	270	150	680	1,500	510	370	1,300	790		
trans-1,2-Dichloroethene	40	22	180	160	59	130	160	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Ethyltoluene	7	<2	<9.7	<7.8	<6.7	<13	<18	<8.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Tetrachloroethene	53	5	54	58	52	79	52	95	20	<140	<140	<130	47	42	<140	<130		
1,1,1-Trichloroethane	90	6	100	87	56	74	93	75	29	<140	<140	<130	27	19	<140	<130		
Trichloroethene	250	94	650	540	400	710	920	750	150	140	280	410	300	330	720	430		
1,2,4-Trimethylbenzene	14	2	<9.7	<7.8	<6.7	<13	<18	<8.2	<6.9	<140	<140	<130	<1.3	<0.64	<140	<130		
1,3,5-Trimethylbenzene	<2	<2	<9.7	<7.8	<6.7	<13	<18	<8.2	<6.9	<140	<140	<130	<1.3	<0.64	<140	<130		
Vinyl Chloride	12	15	180	29	12	<13	130	<8.2	60	<140	<140	<260	61	18	<140	<130		
Xylenes, Total	29	5	<9.7	<7.8	<6.7	<13	<18	<8.2	<5.7	<140	<280	<260	<2.2	<1.1	<280	<270		
Soil Vapor Extraction Wells:	1 - 40D																	

Notes: \* As of September 15, 2001, began cycling of two soil vapor extraction branches with weekly rotation of branches.

October 2002 data was validated to Level IV; no flags were required for the data in this table collected on that date.

Results are reported in parts per billion on a volume per volume basis (ppb[v/v]) for primary detected constituents, analyzed via United States Environmental Protection Agency Method TO-14.

AS = Air sparging system (on or off).

**Bold** = Analyte detected greater than the laboratory reporting limit.

< = Not detected greater than the reporting limit provided.

NA = Not analyzed.

**Table 2**  
**Summary of Summa Canister Sampling for Soil Vapor Extraction Lines**  
**Wayne Reclamation & Recycling**

CONSTITUENT (ppb[v/v])	SOUTHEAST AREA											
	BRANCHES A - F											
	AS-ON 4/15/2003	AS-OFF 4/21/2003	AS-ON 10/15/2003	AS-OFF 10/18/2003	AS-ON 4/19/2004	AS-OFF 4/23/2004	AS-ON 10/14/2004	AS-OFF 10/19/2004	AS-ON 4/19/2005	AS-OFF 4/25/2005	AS-ON 10/12/2005	AS-OFF 10/12/2005
1,1-Dichloroethane	<130	<130	<150	<150	<13	<140	<140	<150	6.7	< 12.9	< 130	< 130
cis-1,2-Dichloroethene	<b>190</b>	<b>470</b>	<b>390</b>	<b>340</b>	<b>790</b>	<b>160</b>	<b>330 (UB)</b>	<b>330 (UB)</b>	<b>742</b>	<b>742</b>	<b>430</b>	<b>400</b>
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	< 0.7	< 13.7	< 130	< 130
4-Ethyltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	<130	<130	<150	<150	<b>29</b>	<140	<140	<150	<b>19.1</b>	<b>39.5</b>	< 130	< 130
1,1,1-Trichloroethane	<130	<130	<150	<150	<b>21</b>	<140	<140	<150	<b>19.2</b>	<b>30.5</b>	< 130	< 130
Trichloroethene	<130	<b>270</b>	<b>260</b>	<b>240</b>	<b>390</b>	<140	<b>180 (UB)</b>	<b>180 (UB)</b>	<b>407</b>	<b>323</b>	<b>240</b>	<b>230</b>
1,2,4-Trimethylbenzene	<130	<130	<150	<150	<13	<140	<140	<150	<b>0.86</b>	< 12.9	< 130	< 130
1,3,5-Trimethylbenzene	<130	<130	<150	<150	<13	<140	<140	<150	< 0.66	< 12.9	< 130	< 130
Vinyl Chloride	<130	<130	<150	<150	<b>30</b>	<140	<140	<150	< 0.69	< 13.4	< 130	< 130
Xylenes, Total	<270	<270	<460	<450	<b>30</b>	<140	<140	<150	<b>1.75</b>	< 21.4	< 270	< 270
Soil Vapor Extraction Wells:	I - 40D											

**Notes:** Results are reported in parts per billion on a volume per volume basis (ppb[v/v]) for primary detected constituents, analyzed via United States Environmental Protection Agency Method TO-14.

AS = Air sparging (on or off).

**Bold** = Analyte detected greater than the laboratory reporting limit.

April and October 2003, April 2004, and April and October 2005 data was validated to Level II; no flags were required for the data in this table collected on those dates.

October 2004 data validated to Level II; (UB) = estimated value due to blank contamination.

< = Not detected greater than the reporting limit provided.

NA = Not analyzed.

**Table 2**  
**Summary of Summa Canister Sampling for Soil Vapor Extraction Lines**  
**Wayne Reclamation & Recycling**

CONSTITUENT (ppb[v/v])	ABOVEGROUND STORAGE TANK AREA										
	BRANCHES G and H <sup>(1)</sup>										
	1/11/1996	11/25/1996	9/3/1997	11/18/1997	4/21/1998	10/16/1998	4/21/1999	11/22/1999	4/18/2000	10/2/2000	4/23/2001
1,1-Dichloroethane	39	270	11	6	<2	<2.0	<2.0	<2.0	9.1	10	1.3
cis-1,2-Dichloroethene	1,800	660	820	310	110	50	21	24	330	300	21
trans-1,2-Dichloroethene	120	63	59	24	4.8	2.2	<2.0	<2.0	28	27	NA
4-Ethyltoluene	190	<22	10	3	16	<2.0	4	2.1	<7.3	<6.1	NA
Tetrachloroethene	1,600	<22	460	67	21	6	2.8	<2.0	58	75	15
1,1,1-Trichloroethane	790	2,700	180	65	3.4	2	<2.0	<2.0	55	61	9.9
Trichloroethene	1,700	140	1,500	420	57	48	8.1	9	590	710	57
1,2,4-Trimethylbenzene	230	<22	12	4	22	<2.0	7.5	2.8	<7.3	<6.1	<0.71
1,3,5-Trimethylbenzene	120	<22	20	4	6.3	<2.0	2.2	<2.0	<7.3	<6.1	<0.71
Vinyl Chloride	130	<22	<8.4	22	7	<2.0	2.3	3.6	<7.3	<6.1	<0.74
Xylenes, Total	55	<22	25	46	57	<2.0	18	2.1	<7.3	31	3.49
Soil Vapor Extraction Wells:	41 - 55										

**Notes:**

Results are reported in parts per billion on a volume per volume basis (ppb[v/v]) for primary detected constituents, analyzed via United States Environmental Protection Agency Method TO-14.

<sup>(1)</sup> Branch H operations suspended as of the beginning of October 2002.

**Bold** = Analyte detected greater than the laboratory reporting limit.

< = Not detected greater than the reporting limit provided.

**Table 2**  
**Summary of Summa Canister Sampling for Soil Vapor Extraction Lines**  
**Wayne Reclamation & Recycling**

CONSTITUENT (ppb[v/v])	ABOVEGROUND STORAGE TANK AREA									
	BRANCHES G and H <sup>(1)</sup>		BRANCH G (EAST BRANCH)							
	11/2/2001	4/23/2002	10/23/2002	12/18/2002 *	4/17/2003	10/15/2003	4/19/2004	10/19/2004	4/19/2005	10/12/2005
1,1-Dichloroethane	4.6	0.77	<140	<140	<130	<150	<13	5.7	<13.2	<140
cis-1,2-Dichloroethene	130	27	<140	580	190	<150	160	170 (UB)	64.6	290
trans-1,2-Dichloroethene	<0.57	NA	NA	NA	NA	NA	NA	NA	<14.1	<140
4-Ethyltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	71	6.6	<140	<140	<130	<150	23	26.8	21.9	<140
1,1,1-Trichloroethane	33	3.6	<140	<140	<130	<150	<12	16.9	74.3	<140
Trichloroethene	150	22	180	440	280	260	360	350 (UB)	105	260
1,2,4-Trimethylbenzene	<0.69	<0.69	<140	<140	<130	<150	<13	4.0	<13.2	<140
1,3,5-Trimethylbenzene	<0.69	<0.69	<140	<140	<130	<150	<13	1.2	<13.2	<140
Vinyl Chloride	2.5	0.92	<140	<140	<130	<150	<14	18.4 (UB)	<13.8	<140
Xylenes, Total	41	2.79	<290	<290	<270	<450	47	9.3	<22.1	<290
Soil Vapor Extraction Wells:	41 - 55		41 - 43, 50, and 53 - 58							

**Notes:** Results are reported in parts per billion on a volume per volume basis (ppb[v/v]) for primary detected constituents, analyzed via United States Environmental Protection Agency Method TO-14.

<sup>(1)</sup> Branch H operations suspended as of the beginning of October 2002.

< = Not detected greater than the reporting limit provided.

NA = Not analyzed.

\* Additional sampling following the completion and connection of new Soil Vapor Extraction Wells 56, 57, and 58.

**Bold** = Analyte detected greater than the laboratory reporting limit.

October 2002 data was validated to Level IV; no flags were required for the data in this table collected on that date.

April and October 2003, April 2004, and April and October 2005 data was validated to Level II; no flags were required for the data in this table collected on those dates.

October 2004 data validated to Level II; (UB) = estimated value due to blank contamination.

**Table 3**  
**Monitoring Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled	MONITORING WELL MW-1D (Southeast Area)											PRG (µg/L)
		8/1988	6/7/1996	11/6/1996	6/12/1997	10/14/1998	10/13/1999	10/2/2000	10/31/2001	10/25/2002	10/15/2003	10/20/2004	10/12/2005
<b>VOCs (µg/L)</b>													
Acetone		ND	ND	NA	NA	ND	ND	ND	ND	<20.0	<20.0	<20	3,650
Benzene		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	0.617
Bromomethane		ND	ND	ND	ND	ND	ND	ND	ND	NA	<2.0	<2	--
2-Butanone (MEK)		ND	ND	NA	NA	NA	NA	NA	NA	<12.5	<20.0	<20	--
n-Butylbenzene		ND	ND	NA	NA	ND	ND	ND	ND	<1.0	<1.0	<1	--
Carbon Disulfide		ND	ND	NA	NA	ND	ND	ND	ND	<1.0	<20.0	<20	768
Chloroethane		ND	ND	NA	ND	ND	ND	ND	ND	<5.0	<2.0	<2	--
Chloroform		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	0.274
Dibromomethane		ND	ND	NA	NA	ND	ND	ND	ND	<1.0	<1.0	<1	--
1,1-Dichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	973
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	--
1,1-Dichloroethene		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	0.0167
cis-1,2-Dichloroethene		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	70
trans-1,2-Dichloroethene		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	100
1,2-Dichloroethene, Total		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	(170)
1,2-Dichloropropane		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	1.25
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	700
4-Methyl-2-pentanone (MIBK)		ND	ND	NA	NA	ND	ND	ND	ND	<12.5	<20.0	<20	487
Tetrachloroethene		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	1.43
Toluene		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	1,000
1,1,1-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	200
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	0.314
Trichloroethene		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	2.54
1,2,4-Trimethylbenzene		ND	ND	NA	NA	ND	ND	ND	ND	<1.0	NA	<5	--
Vinyl Chloride		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	0.0283
Xylenes, Total		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	828
<b>TOTAL VOCs</b>		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
<b>Metals (mg/L)</b>													
Arsenic, Dissolved	0.0059	0.005	ND	ND	ND	ND	ND	ND	ND	<0.100	<0.0100	<0.01	--
Barium, Dissolved	0.132	0.13	0.13	0.12	0.16	0.68	0.14	0.18	0.226	0.147	0.140	0.175	--
Cadmium, Dissolved	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.030	<0.00500	<0.001	--
Chromium, Dissolved total	ND	ND	ND	ND	0.013	ND	ND	ND	ND	<0.040	0.0207	<0.01	--
Cyanide, Total	0.009	ND	ND	ND	ND	ND	ND	ND	ND	<0.005	<0.00500	<0.005	--
Lead, Dissolved	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.080	<0.00500	<0.005	--
Nickel, Dissolved	ND	ND	ND	0.051	ND	ND	ND	ND	0.012	0.013	0.0117	<0.05	--
Zinc, Dissolved	0.013	0.06	ND	0.025	0.031	0.13	ND	0.068	0.072	0.220	<0.0200	0.0358	--

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).

Metals reported in milligrams per liter (mg/L).

October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.

October 2003, October 2004, and October 2005 data validated to Level II; no flags were required for the data in this table collected on those dates.

-- = No PRG assigned.

< = Not detected greater than the reporting limit provided.

**Bold** = Analyte detected greater than the laboratory reporting limit.

*Italics* = Reporting limit greater than the corresponding PRG.

ND = Not detected greater than the method detection limit.

NA = Not analyzed.

**Table 3**  
**Monitoring Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled	MONITORING WELL MW-3S (Southeast Area)										PRG ( $\mu\text{g/L}$ )	
		3/1988	8/1988	11/29/1995	8/27/1996	11/06/1996	6/13/1997	10/14/1998	10/13/1999	10/02/2000	10/31/2001	10/15/2003	
<b>VOCs (<math>\mu\text{g/L}</math>)</b>													
Acetone		ND	ND	NA	NA	NA	NA	ND	ND	ND	<20.0	3,650	
Benzene		ND	1.1	ND	ND	ND	ND	ND	ND	ND	<1.0	0.617	
Bromomethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	-	
2-Butanone (MEK)		ND	ND	NA	NA	NA	NA	NA	NA	NA	<12.5	--	
n-Butylbenzene		ND	ND	ND	ND	NA	NA	ND	ND	ND	<1.0	--	
Carbon Disulfide		ND	2.3	NA	NA	NA	NA	NA	ND	ND	<1.0	768	
Chloroethane		ND	ND	ND	ND	NA	ND	ND	ND	ND	<5.0	--	
Chloroform		ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	0.274	
Dibromomethane		ND	ND	ND	ND	NA	NA	ND	ND	ND	<1.0	--	
1,1-Dichloroethane		ND	23	ND	ND	1.5	ND	ND	ND	ND	<1.0	973	
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	--	
1,1-Dichloroethene		ND	16	ND	ND	1.9	ND	ND	ND	ND	<1.0	0.0167	
cis-1,2-Dichloroethene		NA	NA	NA	3,500	2,600	1,200	1,100	1,400	840	738	70	
trans-1,2-Dichloroethene		NA	NA	NA	118	92	45	54	33	38	42.6	22.2	
1,2-Dichloroethene, Total		24,000	6,900	2,200	3,610	2,692	1,245	1,154	1,453	878	775	(170)	
1,2-Dichloropropane		ND	8.4	ND	ND	3.7	ND	ND	ND	ND	<1.0	1.25	
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	700	
4-Methyl-2-pentanone (MIBK)		ND	ND	NA	NA	NA	NA	NA	ND	ND	<12.5	487	
Tetrachloroethene		ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	1.43	
Toluene		ND	3.4	ND	ND	ND	ND	ND	ND	ND	<1.0	1,000	
1,1,1-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	200	
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	0.314	
Trichloroethene		ND	1.1	ND	ND	ND	ND	ND	ND	ND	1.9	2.54	
1,2,4-Trimethylbenzene		ND	ND	ND	ND	NA	NA	ND	ND	ND	<1.0	--	
Vinyl Chloride		1,300	430	380	495	260	90	120	310	67	1,300	0.0283	
Xylenes, Total		ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	828	
<b>TOTAL VOCs</b>		<b>25,300.0</b>	<b>7,385.3</b>	<b>2,580</b>	<b>4,010</b>	<b>2,959.1</b>	<b>1,335</b>	<b>1,274</b>	<b>1,743</b>	<b>945</b>	<b>786</b>	<b>295.2</b>	<b>--</b>
<b>Metals (mg/L)</b>													
Arsenic, Dissolved		0.015	0.0234	0.005	ND	ND	ND	0.011	ND	ND	<0.100	--	
Barium, Dissolved		0.306	0.32	0.08	0.04	ND	ND	0.048	0.28	0.032	0.041	<0.020	
Cadmium, Dissolved		ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.030	--	
Chromium, Dissolved total		ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.040	--	
Cyanide, Total		0.015	ND	ND	ND	ND	ND	ND	ND	ND	<0.005	--	
Lead, Dissolved		ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.080	--	
Nickel, Dissolved		ND	0.0151	ND	ND	ND	ND	ND	ND	ND	0.020	--	
Zinc, Dissolved		ND	0.0126	ND	ND	ND	ND	0.27	ND	ND	<0.050	--	

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter ( $\mu\text{g/L}$ ).

Metals reported in milligrams per liter (mg/L).

October 2003 data validated to Level II; no flags were required for the data in this table collected on that date.

This monitoring well was scheduled for sampling in October 2002 and October 2004, but due to dry conditions at the site, there was inadequate groundwater volume.

-- = No PRG assigned.

< = Not detected greater than the reporting limit provided.

**Bold** = Analyte detected greater than the laboratory reporting limit.

*Italics* = Reporting limit greater than the corresponding PRG.

NA = Not analyzed.

ND = Not detected greater than the method detection limit.

Shaded = Analyte detected greater than the corresponding PRG.

**Table 3**  
**Monitoring Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled	MONITORING WELL MW-4S (Recovery Well RW-4 Area)																				PRG ( $\mu\text{g/L}$ )	
		8/1988	7/23/1992	11/28/1995	8/27/1996	6/12/1997	11/18/1997	4/21/1998	10/15/1998	4/12/1999	10/13/1999	5/4/2000	10/2/2000	4/19/2001	10/31/2001	4/23/2002	10/23/2002	4/16/2003	10/15/2003	4/20/2004	10/19/2004	04/19/2005	10/13/2005
<b>VOCs (<math>\mu\text{g/L}</math>)</b>																							
Acetone	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<20.0	<20.0	<20	<20	<20	3,650
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<1
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<5.0	NA	<2.0	<2.0	<2	--
2-Butanone (MEK)	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<12.5	<12.5	<20	<20	<20	--
n-Butylbenzene	ND	NA	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	--
Carbon Disulfide	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<20	<20	<20	768
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<5.0	<5.0	<2.0 (J)	<2.0	<2	--
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	0.274
Dibromomethane	ND	NA	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	--
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	973
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	--
cis-1,2-Dichloroethene	ND	ND	ND	4.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	0.0167
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	100
1,2-Dichloroethene, Total	ND	ND	ND	4.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	(170)
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	1.25
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	700
4-Methyl-2-pentanone (MIBK)	ND	ND	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<12.5	<12.5	<20	<20	<20	487
Tetrachloroethylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	1.43
Toluene	ND	ND	ND	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	1,000
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	200
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	0.314
Trichloroethylene	ND	ND	ND	11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	2.54
1,2,4-Trimethylbenzene	ND	NA	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	NA	NA	<5	--
Vinyl Chloride	ND	ND	ND	ND	ND	ND	12	15	29	33	33	7.4	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	0.0283
Xylenes, Total	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	828
<b>TOTAL VOCs</b>	<b>2.7</b>	<b>1</b>	<b>ND</b>	<b>16.6</b>	<b>ND</b>	<b>ND</b>	<b>12</b>	<b>15</b>	<b>29</b>	<b>33</b>	<b>23</b>	<b>13</b>	<b>7.4</b>	<b>6.1</b>	<b>15.1</b>	<b>18.4</b>	<b>24.8</b>	<b>167</b>	<b>12.0</b>	<b>8.8</b>	<b>8.2</b>	<b>--</b>	
<b>Metals (<math>\text{mg/L}</math>)</b>																							
Arsenic, Dissolved	NA	ND	<b>0.006</b>	ND	ND	ND	ND	ND	<b>0.0082</b>	ND	<b>0.0081</b>	ND	ND	ND	ND	ND	<0.10	<0.100	<b>0.0201</b>	<b>0.0126</b>	<b>0.0173</b>	<b>0.0173</b>	--
Barium, Dissolved	NA	<b>0.159</b>	0.13	0.11	0.67	<b>0.28</b>	<b>0.48</b>	0.3	<b>0.49</b>	<b>0.58</b>	0.79	1.1	1.1	<b>0.26</b>	<b>0.26</b>	<b>0.35</b>	<b>0.219</b>	<b>0.230</b>	<b>0.228</b>	<b>0.194</b>	<b>0.194</b>	<b>0.207</b>	
Cadmium, Dissolved	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.030	<0.030	<0.005	<0.00100	<0.001	<0.001	
Chromium, Dissolved total	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.040	<0.040	<0.005	<0.0100	<0.01	<0.01	
Cyanide, Total	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.005	<b>0.0071</b>	<0.005	<0.00500	<0.005	<0.005	
Lead, Dissolved	NA	ND	ND	<b>0.0032</b>	ND	ND	ND	ND	ND	ND	ND	ND	ND	<b>0.16</b>	ND	<0.080	<0.080	<b>0.00597</b>	<b>&lt;0.00500</b>	<0.005	<0.005		
Nickel, Dissolved	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<b>0.011</b>	ND	ND	<0.010	<0.010	<0.0500	<0.050	<0.05	<0.05		

**Table 3**  
**Monitoring Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled	MONITORING WELL MW-7S (Recovery Well RW-4 Area)													PRG (µg/L)	
		3/1988	8/1988	11/29/1995	8/27/1996	11/6/1996	6/12/1997	10/15/1998	10/13/1999	10/2/2000	10/30/2001	10/23/2002	10/15/2003	10/19/2004	10/12/2005	
<b>VOCs (µg/L)</b>																
Acetone		ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	<20.0	<20.0	<20	3,650	
Benzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	0.617	
Bromomethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	<2.0	<2	--	
2-Butanone (MEK)		ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	<12.5	<20.0	<20	--	
n-Butylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	--	
Carbon Disulfide		ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	<1.0	<20.0	<20	768	
Chloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<5.0	<2.0	<2	--	
Chloroform		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	0.274	
Dibromomethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	--	
1,1-Dichloroethane		ND	23	7.4	10	7.4	5.1	ND	ND	ND	2.9	3.4	4.8	4.3	2.60	
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	--	
1,1-Dichloroethene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	0.0167	
cis-1,2-Dichloroethene		NA	NA	1,100	980	780	640	87	96	120	187	237	344	220	70	
trans-1,2-Dichloroethene		NA	NA	59	74	55	48	23	10	12	21.2	20.6	33.0	29	18	
1,2-Dichloroethene, Total		2,600	1,900	1,159	1,054	855	688	110	106	132	208.2	257.6	377	250	(170)	
1,2-Dichloropropane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	1.25	
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	700	
4-Methyl-2-pentanone (MIBK)		ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	<12.5	<20.0	<20	487	
Tetrachloroethylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	1.43	
Toluene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	1,000	
1,1,1-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	200	
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	0.314	
Trichloroethylene		ND	ND	52	92	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	2.54	
1,2,4-Trimethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	NA	<5	--	
Vinyl Chloride		ND	18	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	0.0283	
Xylenes, Total		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	828	
<b>TOTAL VOCs</b>		2,600	1,924.3	1,169.6	1,156	862.4	693.1	110	112.1	132	211.1	261.0	381.8	363.3	220.6	--
<b>Metals (mg/L)</b>																
Arsenic, Dissolved		0.005	0.003	ND	ND	ND	ND	ND	ND	ND	ND	<0.100	0.0118	<0.01	--	
Barium, Dissolved		0.286	0.191	0.17	0.12	0.16	0.16	0.2	0.77	0.22	0.17	0.202	0.135	0.125	0.174	
Cadmium, Dissolved		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.030	<0.00100	<0.001	--	
Chromium, Dissolved total		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.040	<0.0100	<0.01	--	
Cyanide, Total		ND	0.016	0.095	ND	ND	ND	ND	ND	ND	ND	0.0060	<0.00500	<0.005	--	
Lead, Dissolved		ND	ND	ND	0.0099	ND	ND	ND	ND	ND	ND	<0.080	<0.00500	<0.005	--	
Nickel, Dissolved		ND	ND	ND	0.06	ND	ND	ND	ND	0.006	ND	<0.010	<0.0500	<0.05	--	
Zinc, Dissolved		ND	0.0263	ND	0.02	ND	ND	ND	0.22	ND	ND	<0.050	0.0272	<0.02	--	

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).

Metals reported in milligrams per liter (mg/L).

October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.

October 2003, October 2004, and October 2005 data validated to Level II; no flags were required for the data in this table collected on those dates.

-- = No PRG assigned.

< = Not detected greater than the reporting limit provided.

**Bold** = Analyte detected greater than the laboratory reporting limit.

*Italics* = Reporting limit greater than the corresponding PRG.

NA = Not analyzed.

ND = Not detected greater than the method detection limit.

Shaded = Analyte detected greater than the corresponding PRG.

**Table 3**  
**Monitoring Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled	MONITORING WELL MW-9S (Aboveground Storage Tank Area)																				PRG (µg/L)			
		3/1988	8/1988	7/24/1992	11/7/1995	8/27/1996	6/12/1997	11/18/1997	4/21/1998	10/15/1998	4/12/1999	10/20/1999	5/4/2000	10/2/2000	4/19/2001	10/30/2001	4/23/2002	10/23/2002	4/16/2003	10/15/2003	4/20/2004	10/19/2004	4/19/2005	10/13/2005	
<b>VOCs (µg/L)</b>																									
Acetone	ND	ND	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<20.0	<20.0	<20	<20	<20	<100	3,650	
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<5	--	0.617	
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<5.0	NA	<2.0	<2.0	<2	<10	--	
2-Butanone (MEK)	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<12.5	<12.5	<20	<20	<20	<100	--	
n-Butylbenzene	ND	ND	ND	4.2	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<5	--	
Carbon Disulfide	ND	0.59	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<5	768	
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<5.0	<5.0	<2.0 (J)	<2.0	<2	<10	--	
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<5	0.274	
Dibromomethane	ND	ND	NA	1.8	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<5	--	
1,1-Dichloroethane	ND	8.3	ND	18	ND	13	ND	16	17	12	5.5	59	13	ND	1.5	1.7	3.9	4.2	<1.0	16	2.3	1.2	20	973	
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<5	--	
cis-1,2-Dichloroethene	ND	92	ND	56	ND	15	76	51	53	48	67	63	51	ND	7.5	38.4	32.2	<1.0	2.7	1.7	1.7	1.7	1.7	0.0167	
trans-1,2-Dichloroethene	NA	NA	NA	30,000	24,000	18,000	NA	10,000	19,000	8,900	NA	43,000	37,000	54,000	3,360	3,600	18,300	16,200	29,400	35,000	35,000	37,000	55,000	70	
1,2-Dichloroethene, Total	33,010	32,400	23,000	30,140	24,000	18,200	42,390	10,190	19,170	8,895	8,905	43,350	37,210	54,000	3,434.9	3,663.3	18,422	16,345	29,650	35,100	35,100	37,000	55,500	(170)	
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<5	1.25	
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<5	700	
4-Methyl-2-pentanone (MIBK)	ND	2.2	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<12.5	<12.5	<20	<20	<20	<100	487	
Tetrachloroethylene	ND	17	ND	36	ND	78	220	280	250	720	61	37	97	ND	28	45.9	63.8	59.1	106	110	110	110	110	110	1.43
Toluene	ND	21	ND	ND	ND	ND	ND	8.5	9.7	22	ND	ND	ND	ND	ND	ND	ND	<1.0	2.1	4.0	<1.0	<1	6.4	1,000	
1,1,1-Trichloroethane	ND	9.9	ND	ND	ND	ND	ND	13	21	13	ND	5.6	6.8	ND	1.3	2.5	5.0	3.2	9.6	11	1.4	1.9	10	200	
1,1,2-Trichloroethane	ND	ND	ND	3	ND	ND	ND	8	12	ND	ND	6.4	ND	ND	ND	ND	ND	<1.5	1.6	1.6	<1.0	<1	<5	0.314	
Trichloroethylene	16,000	13,000	9,700	17,000	28,000	24,000	67,000	25,000	12,000	16,000	5,800	5,800	21,000	16,000	4,590	9,300	6,470	3,180	32,200	35,000	35,000	37,000	41,000	49,000	2.54
1,2,4-Trimethylbenzene	ND	ND	NA	4.3	ND	ND	NA	ND	ND	ND	6.2	ND	ND	ND	ND	ND	ND	<1.0	<1.0	NA	NA	<5	<25	--	
Vinyl Chloride	ND	ND	ND	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0283		
Xylenes, Total	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	2.9	<1.0	<1	<5	828	
<b>TOTAL VOCs</b>	<b>51,000</b>	<b>50,641</b>	<b>33,040</b>	<b>48,363.1</b>	<b>52,680</b>	<b>42,506</b>	<b>110,066</b>	<b>35,591.5</b>	<b>31,530.7</b>	<b>25,773.5</b>	<b>14,033.5</b>	<b>49,585</b>	<b>58,529.8</b>	<b>21,400</b>	<b>8,064</b>	<b>13,025.1</b>	<b>25,124.8</b>	<b>25,038.2</b>	<b>62,373.0</b>	<b>74,844.6</b>	<b>12,068.4</b>	<b>7,836.0</b>	<b>104,390.0</b>	--	
<b>Metals (mg/L)</b>																									
Arsenic, Dissolved	0.008	0.0106	0.011	0.01	0.006	ND	ND	ND	0.026	ND	0.0051	ND	ND	ND	ND	ND	ND	<0.10	<0.100	<0.100	<0.0100	<0.01	0.0103	--	
Barium, Dissolved	0.181	0.139	0.144	0.11	0.04	ND	ND	0.035	0.079	0.04	0.059	0.08	0.055	0.027	0.053	0.027	0.121	0.089	0.048	0.0749	0.09	0.0674	0.102	--	
Cadmium, Dissolved	ND	ND	271	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.030	<0.030	<0.005	<0.00100	<0.001	<0.001	--	
Chromium, Dissolved total	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0052	ND	ND	ND	ND	ND	ND	<0.040	<0.040						

**Table 3**  
**Monitoring Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled	MONITORING WELL MW-10S (Southeast Area)																				PRG ( $\mu\text{g/L}$ )			
		3/1988	8/1988	7/23/1992	11/08/1995	8/27/1996	11/18/1997	4/21/1998	10/15/1998	4/12/1999	10/13/1999	5/04/2000	10/02/2000	4/19/2001	10/31/2001	4/23/2002	10/25/2002	4/16/2003	10/15/2003	4/20/2004	10/22/2004	04/19/2005	10/13/2005		
<b>VOCs (<math>\mu\text{g/L}</math>)</b>																									
Acetone	ND	ND	ND	NA	NA	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	<20.0	<20.0	<20	<20	<20	<20	3,650		
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<1	0.617		
Bromomethane	ND	ND	ND	4.4	ND	ND	<5.0	NA	<2.0	<2.0	<2	<2	--												
2-Butanone (MEK)	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<12.5	<12.5	<20	<20	<20	<20	--		
n-Butylbenzene	ND	ND	NA	ND	ND	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	4.5	<1.0	<1.0	<1	<1	--		
Carbon Disulfide	ND	ND	ND	NA	NA	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<20	<20	<20	<20	768		
Chloroethane	ND	ND	ND	2.2	ND	ND	<5.0	<5.0	<2.0 (J)	<2.0	<2	<2	--												
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	<1	0.274		
Dibromomethane	ND	ND	NA	ND	ND	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	<1	--		
1,1-Dichloroethane	630	140	91	ND	ND	ND	ND	28	63	7.9	ND	ND	1.9	5.1	1.1	ND	<1.0	1.2	<1	2.8	973	--			
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	<1	--		
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	<1	0.0167		
cis-1,2-Dichloroethene	NA	NA	NA	37,000	15,000	NA	3,100	3,100	7,900	6.8	3,600	3,400	1,900	1,18	2,980	5,250	43.8	1,130	1,130	1,130	1,130	1,500	70		
trans-1,2-Dichloroethene	NA	NA	NA	440	350	NA	100	170	200	12,000	170	100	150	6.2	162	148	47	80.6	80.6	26	65	100	--		
1,2-Dichloroethene, Total	56,400	26,000	8,700	37,400	15,350	8,140	5,700	5,700	8,100	12,000	7,700	3,500	3,500	124.2	3,100	5,500	90.8	1,212	1,212	1,212	1,212	1,365	(170)		
1,2-Dichloropropane	ND	ND	ND	63	ND	ND	1.2	<1.0	<1.0	<1.0	<1	<1	1.25												
Ethylbenzene	ND	4	ND	5.7	ND	ND	<1.0	<1.0	<1.0	<1	<1	<1	700												
4-Methyl-2-pentanone (MIBK)	ND	ND	ND	NA	NA	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	<12.5	<12.5	<20	<20	<20	<20	487		
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	<1	1.43		
Toluene	ND	3,500	9,000	270	50	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	<1	1,000										
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	<1	200		
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	<1	0.314		
Trichloroethene	ND	2	ND	5	ND	70	ND	ND	34	1.3	1.9	ND	ND	2	2.54										
1,2,4-Trimethylbenzene	ND	ND	NA	ND	ND	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	NA	NA	<5	<5	--		
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	75.6	75.6	75.6	75.6	0.0283		
Xylenes, Total	ND	28	96	213	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<1	828												
<b>TOTAL VOCs</b>	62,130	32,501	20,987	40,456.0	16,120	8,510	5,530	4,509	8,426.3	12,721.5	3,770	3,625.7	2,030	124.2	3,195.3	5,540.2	215.2	1,292.8	1,250.5	1,507.9	357.4	1,646	--		
<b>Metals (mg/L)</b>																									
Arsenic, Dissolved	0.009	ND	ND	0.006	0.002	ND	ND	ND	ND	ND	ND	ND	ND	NA	<0.10	<0.100	0.0242	<0.0100	0.0107	<0.01	--	--	--		
Barium, Dissolved	0.239	0.0537	0.137	0.04	0.04	0.062	ND	0.032	0.023	0.36	0.068	0.033	0.047	0.064	0.061	NA	0.035	<0.020	0.0324	0.0686	0.0539	<0.02	--		
Cadmium, Dissolved	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	<0.030	<0.030	<0.005	<0.00100	<0.001	<0.001	--			
Chromium, Dissolved total	0.017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	<0.040	<0.040	0.00849	<0.0100	<0.01	<0.01	--			
Cyanide, Total	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	0.0094	ND	0.037	NA	<0.005	0.011	0.0381	0.0128	0.108	<0.005
Lead, Dissolved	ND	ND	ND	ND	0.0028	ND	ND	ND	ND	ND															

**Table 3**  
**Monitoring Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled	MONITORING WELL MW-11S (Southeast Area)													PRG (µg/L)		
		3/1988	8/1988	7/24/1992	11/08/1995	8/27/1996	11/06/1996	6/13/1997	10/15/1998	10/13/1999	10/02/2000	10/31/2001	10/24/2002	10/15/2003	10/22/2004		
<b>VOCs (µg/L)</b>																	
Acetone		ND	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	<20.0	<20.0	<20	3,650	
Benzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	0.617	
Bromomethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2	--	--	
2-Butanone (MEK)		ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	<12.5	<20.0	<20	--	
n-Butylbenzene		ND	ND	NA	ND	ND	NA	NA	ND	ND	ND	ND	<1.0	<1.0	<1	--	
Carbon Disulfide		ND	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	<1.0	<20.0	<20	768	
Chloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<5.0	<2.0	<2	--	
Chloroform		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	0.274	
Dibromomethane		ND	ND	NA	ND	ND	NA	NA	ND	ND	ND	ND	<1.0	<1.0	<1	--	
1,1-Dichloroethane		ND	ND	19	5.3	8.3	6.6	ND	5.4	5.7	8.6	5.9	5.9	3.7	3.7	973	
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	--	
1,1-Dichloroethylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	0.0167	
cis-1,2-Dichloroethylene		NA	NA	ND	280	150	200	170	160	440	460	669	694	766	400	70	
trans-1,2-Dichloroethylene		NA	NA	ND	15	6.5	10	10	ND	ND	12	15.7	8.7	<1.0	5.6	8.3	
1,2-Dichloroethylene, Total		44	19	ND	294	156.5	210	180	160	440	472	684.7	702.7	705	408.3	(170)	
1,2-Dichloropropane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	1.25	
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	700	
4-Methyl-2-pentanone (MIBK)		ND	ND	NA	NA	NA	NA	NA	ND	ND	ND	ND	<12.5	<20.0	<20	487	
Tetrachloroethylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	1.43	
Toluene		ND	ND	ND	1.5	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	1,000	
1,1,1-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	200	
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	0.314	
Trichloroethylene		ND	ND	ND	17	3.8	4.2	3.8	ND	6.2	10.5	15	17	25	2.54		
1,2,4-Trimethylbenzene		ND	ND	NA	ND	NA	NA	ND	ND	ND	ND	ND	<1.0	NA	<5	--	
Vinyl Chloride		*	*	20	12	14	16	64	15	160	112	120	110	110	110	0.0283	
Xylenes, Total		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	828	
<b>TOTAL VOCs</b>		48	22	20	336.1	192.3	236.1	208.9	232	635.4	643.9	815.8	832.6	894.3	508.2	437.1	--
<b>Metals (mg/L)</b>																	
Arsenic, Dissolved		ND	ND	ND	0.001	ND	ND	ND	ND	ND	ND	ND	<0.100	<0.0100	<0.01	--	
Barium, Dissolved		0.418	0.285	0.17	0.11	0.05	ND	ND	0.042	0.082	0.059	0.085	0.122	0.106	0.0830	0.103	
Cadmium, Dissolved		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.030	<0.00100	<0.001	--	
Chromium, Dissolved total		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.040	<0.0100	<0.01	--	
Cyanide, Total		ND	0.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.005	<0.00500	<0.005	--	
Lead, Dissolved		ND	ND	ND	ND	0.0028	ND	ND	0.015	ND	ND	ND	<0.080	<0.00500	<0.005	--	
Nickel, Dissolved		ND	ND	ND	ND	0.03	ND	ND	ND	ND	ND	ND	<0.010	<0.0500	<0.05	--	
Zinc, Dissolved		0.026	0.0145	0.122	ND	ND	0.021	ND	0.025	ND	ND	0.052	<0.050	<0.0200	<0.02	--	

**Notes:**

In samples where total 1,2-dichloroethylene has been listed, cis-1,2-dichloroethylene is included in that total.

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).

Metals reported in milligrams per liter (mg/L).

October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.

October 2003, October 2004, and October 2005 data validated to Level II; no flags were required for the data in this table collected on those dates.

-- = No PRG assigned.

< = Not detected greater than the reporting limit provided.

**Bold** = Analyte detected greater than the laboratory reporting limit.

*Italics* = Reporting limit greater than the corresponding PRG.

NA = Not analyzed.

ND = Not detected greater than the method detection limit.

Shaded = Analyte detected greater than the corresponding PRG.

**Table 3**  
**Monitoring Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled	MONITORING WELL MW-13S (Southeast Area)							PRG ( $\mu\text{g/L}$ )
		8/1988	11/1/2001	4/23/2002	10/24/2002	10/17/2003	10/22/2004	10/14/2005	
<b>VOCs (<math>\mu\text{g/L}</math>)</b>									
Acetone		ND	ND	ND	ND	<20.0	<20.0	<20	3,650
Benzene		ND	ND	ND	<1.0	<1.0	<1	0.617	
Bromomethane		ND	ND	ND	NA	<2.0	<2	--	
2-Butanone (MEK)		ND	NA	NA	<12.5	<20.0	<20	--	
n-Butylbenzene		ND	ND	ND	<1.0	<1.0	<1	--	
Carbon Disulfide		ND	ND	ND	<1.0	<20.0	<20	768	
Chloroethane		ND	ND	ND	<5.0	<2.0	<2	--	
Chloroform		ND	ND	ND	<1.0	<1.0	<1	0.274	
Dibromomethane		ND	ND	ND	<1.0	<1.0	<1	--	
1,1-Dichloroethane		ND	ND	ND	<1.0	<1.0	<1	973	
1,2-Dichloroethane		ND	ND	ND	<1.0	<1.0	<1	--	
1,1-Dichloroethene		ND	ND	ND	<1.0	<1.0	<1	0.0167	
cis-1,2-Dichloroethene		NA	200	214	128	87	75	70	
trans-1,2-Dichloroethene		NA	11.7	6.4	3.3	1.9	2.4	100	
1,2-Dichloroethene, Total		28	36.7	206.4	220.1	131.3	88.9	77.4	
1,2-Dichloropropane		ND	17	8.7	13	7.1	<1.0	10.0	
Ethylbenzene		ND	ND	ND	<1.0	<1.0	<1	700	
4-Methyl-2-pentanone (MIBK)		ND	ND	ND	<12.5	<20.0	<20	487	
Tetrachloroethylene		ND	ND	ND	<1.0	<1.0	<1	1.43	
Toluene		ND	ND	ND	<1.0	<1.0	<1	1,000	
1,1,1-Trichloroethane		ND	ND	ND	<1.0	<1.0	<1	200	
1,1,2-Trichloroethane		ND	ND	ND	<1.0	<1.0	<1	0.314	
Trichloroethylene		ND	140	181	99.3	120	270	2.54	
1,2,4-Trimethylbenzene		ND	ND	ND	<1.0	NA	<5	--	
Vinyl Chloride		ND	9.5	12	8.4	17.6	13	2.9	
Xylenes, Total		ND	ND	ND	<1.0	<1.0	<1	0.0283	
<b>TOTAL VOCs</b>	<b>28</b>	<b>540.1</b>	<b>367.1</b>	<b>422.5</b>	<b>255.3</b>	<b>221.9</b>	<b>360.3</b>	<b>--</b>	
<b>Metals (<math>\text{mg/L}</math>)</b>									
Arsenic, Dissolved	0.0036	ND	ND	ND	<0.100	<0.0100	< 0.01	--	
Barium, Dissolved	0.0705	0.19	0.12	0.218 (J)	0.177	0.106	0.197	--	
Cadmium, Dissolved	ND	ND	ND	ND	<0.030	<0.00100	< 0.001	--	
Chromium, Dissolved total	ND	ND	ND	ND	<0.040	<0.0100	< 0.01	--	
Cyanide, Total	0.048	NA	NA	NA	NA	NA	NA	--	
Lead, Dissolved	ND	ND	0.16	ND	<0.080	<0.00500	< 0.005	--	
Nickel, Dissolved	0.0167	ND	ND	ND	<0.010	<0.0500	< 0.05	--	
Zinc, Dissolved	0.0542	ND	ND	0.054 (J)	<0.050	<0.0200	< 0.02	--	

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter ( $\mu\text{g/L}$ ).

Metals reported in milligrams per liter ( $\text{mg/L}$ ).

October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.

October 2003, October 2004, and October 2005 data validated to Level II; no flags were required for the data in this table collected on those dates.

April 2004 data validated to Level II; (J) = estimated.

-- = No PRG assigned.

< = Not detected greater than the reporting limit provided.

**Bold** = Analyte detected greater than the laboratory reporting limit.

*Italics* = Reporting limit greater than the corresponding PRG.

NA = Not analyzed.

ND = Not detected greater than the method detection limit.

Shaded = Analyte detected greater than the corresponding PRG.

**Table 3**  
**Monitoring Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled	MONITORING WELL MW-13D (Southeast Area)	PRG ( $\mu\text{g/L}$ )
		1/28/2002 <sup>(1)</sup>	
<b>VOCs (<math>\mu\text{g/L}</math>)</b>			
Acetone		ND	3,650
Benzene		ND	0.617
Bromomethane		ND	--
2-Butanone (MEK)		ND	--
n-Butylbenzene		ND	--
Carbon Disulfide		ND	768
Chloroethane		ND	--
Chloroform		ND	0.274
Dibromomethane		ND	--
1,1-Dichloroethane		ND	973
1,2-Dichloroethane		ND	--
1,1-Dichloroethene		ND	0.0167
cis-1,2-Dichloroethene		ND	70
trans-1,2-Dichloroethene		ND	100
1,2-Dichloroethene, Total		ND	(170)
1,2-Dichloropropane		ND	1.25
Ethylbenzene		ND	700
4-Methyl-2-pentanone (MIBK)		ND	487
Tetrachloroethene		ND	1.43
Toluene		ND	1,000
1,1,1-Trichloroethane		ND	200
1,1,2-Trichloroethane		ND	0.314
Trichloroethene		ND	2.54
1,2,4-Trimethylbenzene		ND	--
Vinyl Chloride		ND	0.0283
Xylenes, Total		ND	828
<b>TOTAL VOCs</b>		ND	--
<b>Metals (mg/L)</b>			
Arsenic, Dissolved		<0.005	--
Barium, Dissolved		0.10	--
Cadmium, Dissolved		<0.03	--
Chromium, Dissolved total		<0.04	--
Cyanide, Total		NA	--
Lead, Dissolved		<0.08	--
Nickel, Dissolved		<0.02	--
Zinc, Dissolved		<0.05	--

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter ( $\mu\text{g/L}$ ).

Metals reported in milligrams per liter (mg/L).

<sup>(1)</sup> Data suspect due to well integrity.

-- = No PRG assigned.

< = Not detected greater than the reporting limit provided.

**Bold** = Analyte detected greater than the laboratory reporting limit.

ND = Not detected greater than the method detection limit.

NA = Not analyzed.

**Table 3**  
**Monitoring Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled	MONITORING WELL MW-14S (Aboveground Storage Tank Area)																				PRG ( $\mu\text{g/L}$ )		
		8/1988	7/23/1992	11/7/1995	8/27/1996	6/11/1997	11/18/1997	4/21/1998	10/15/1998	4/12/1999	10/14/1999	5/4/2000	10/2/2000	4/19/2001	10/30/2001	4/23/2002	10/23/2002	4/16/2003	10/15/2003	4/20/2004	10/19/2004	4/19/2005	10/13/2005	
<b>VOCs (<math>\mu\text{g/L}</math>)</b>																								
Acetone	ND	ND	NA	NA	NA	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	<20.0	<20.0	<20	<20	<20	<20	3,650	
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<1	0.617	
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<5.0	NA	<2.0	<2.0	<2	<2	--	
2-Butanone (MEK)	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<12.5	<12.5	<20	<20	<20	<20	--	
n-Butylbenzene	ND	NA	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<1	--	
Carbon Disulfide	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<20	<20	<20	<20	768	
Chloroethane	ND	ND	5.4	22	6.6	6.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.8	<5.0	<2.0 (J)	<2.0	<2	<2	--	
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<1	0.274	
Dibromomethane	ND	NA	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<1	--	
1,1-Dichloroethane	270	86	320	260	150	160	74	63	19	21	12	13	5.7	7.4	8.4	10.2	8.6	9.1	4.9	13	6.8	12	973	
1,2-Dichloroethane	ND	ND	1.1	1.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<1	--	
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<1	0.0167	
cis-1,2-Dichloroethene	NA	NA	45	20	3.9	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<1	70	
trans-1,2-Dichloroethene	NA	NA	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<1	100	
1,2-Dichloroethene, Total	ND	ND	71	45	20	3.9	2.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<1	(170)	
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<1	1.25	
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<1	700	
4-Methyl-2-pentanone (MIBK)	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<12.5	<12.5	<20	<20	<20	<20	487	
Tetrachloroethylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<1	1.43	
Toluene	ND	ND	ND	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<1	1,000	
1,1,1-Trichloroethane	ND	5	10	9.1	4.9	2.6	ND	ND	5.2	ND	ND	ND	14	15.1	4.7	2.0	9.5	3.5	4.3	10	10	6.8	200	
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<1	0.314	
Trichloroethene	ND	ND	3.5	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<1	2.54	
1,2,4-Trimethylbenzene	ND	NA	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	NA	NA	<5	<5	--	
Vinyl Chloride	140	47	16	54	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.1	<1.0	<1.0	<1.0	<1.0	<1	<1	0.0283
<b>TOTAL VOCs</b>	<b>1,066</b>	<b>209</b>	<b>402.0</b>	<b>329.0</b>	<b>166.5</b>	<b>171.5</b>	<b>74</b>	<b>63</b>	<b>24.2</b>	<b>21</b>	<b>12</b>	<b>13</b>	<b>19.7</b>	<b>22.5</b>	<b>13.1</b>	<b>16.3</b>	<b>23.9</b>	<b>12.6</b>	<b>13.5</b>	<b>23</b>	<b>16.8</b>	<b>18.8</b>	--	
<b>Metals (<math>\text{mg/L}</math>)</b>																								
Arsenic, Dissolved	0.0054	0.0077	0.014	0.004	ND	ND	ND	0.0079	ND	0.021	ND	ND	ND	ND	ND	ND	<0.10	<0.100	0.0221	0.0136	0.0135	0.0203	--	
Barium, Dissolved	0.0891	0.062	0.05	0.05	0.066	0.069	0.066	0.084	0.056	0.1	0.095	0.11	0.07	0.065	0.089	0.13	0.123	0.088	0.117	0.121	0.109	0.133	--	
Cadmium, Dissolved	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.030	<0.030	<0.005	<0.00100	<0.001	<0.001	--	
Chromium, Dissolved total	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.040	<0.040	<0.005	<0.0100	<0.01	<0.01	--	
Cyanide, Total	0.035	0.006	ND	ND	ND	ND	0.0078	ND	0.017	ND	ND	0.009	ND	0.014	ND	ND	0.006	<0.005	<0.005	<0.00500	<0.005	<0.005	<0.005	--
Lead, Dissolved	ND	ND	ND	0.0065	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.17	ND	<0.080	<0.080	<0.005	<0.00500	<0.005	<0.005	<0.005	--	
Nickel, Dissolved	ND	ND</																						

**Table 3**  
**Monitoring Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled	MONITORING WELL MW-15S (Aboveground Storage Tank Area)										PRG ( $\mu\text{g/L}$ )
		8/6/1992	11/29/1995	6/12/1997	10/14/1999	10/2/2000	10/30/2001	10/23/2002	10/15/2003	10/19/2004	10/13/2005	
<b>VOCs (<math>\mu\text{g/L}</math>)</b>												
Acetone		ND	NA	NA	ND	ND	ND	ND	<20.0	<20.0	<20	3,650
Benzene		ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	<1	0.617
Bromomethane		ND	ND	ND	ND	ND	ND	NA	<2.0	<2	<2	--
2-Butanone (MEK)		ND	NA	NA	NA	NA	NA	<12.5	<20.0	<20	<20	--
n-Butylbenzene		NA	ND	ND	ND	ND	ND	<1.0	<1.0	<1	<1	--
Carbon Disulfide		ND	NA	NA	ND	ND	ND	<1.0	<20	<20	<20	768
Chloroethane		ND	ND	ND	ND	ND	ND	<5.0	<2.0	<2	<2	--
Chloroform		ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	<1	0.274
Dibromomethane		NA	ND	ND	ND	ND	ND	<1.0	<1.0	<1	<1	--
1,1-Dichloroethane		6	5.8	4.9	ND	ND	1.5	ND	<1.0	<1.0	<1	973
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	<1	--
1,1-Dichloroethene		ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	<1	0.0167
cis-1,2-Dichloroethene		10	13	41	NA	ND	32.9	5.9	12.9	2.9	5.8	70
trans-1,2-Dichloroethene		ND	ND	2.5	NA	ND	2.3	ND	<1.0	<1.0	<1	100
1,2-Dichloroethene, Total		10	13	43.5	ND	ND	35.2	5.9	12.9	2.9	5.8	(170)
1,2-Dichloropropane		ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	<1	1.25
Ethylbenzene		ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	<1	700
4-Methyl-2-pentanone (MIBK)		ND	NA	NA	ND	ND	ND	<12.5	<20	<20	<20	487
Tetrachloroethylene		ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	<1	1.43
Toluene		ND	1.1	ND	ND	ND	ND	<1.0	<1.0	<1	<1	1,000
1,1,1-Trichloroethane		ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	<1	200
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	<1	0.314
Trichloroethylene		ND	ND	65	53	ND	10.2	ND	ND	ND	ND	2.54
1,2,4-Trimethylbenzene		NA	ND	ND	ND	ND	ND	<1.0	NA	<5	<5	--
Vinyl Chloride		ND	ND	2.3	ND	ND	ND	<1.0	<1.0	<1	<1	0.0283
Xylenes, Total		ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	<1	828
<b>TOTAL VOCs</b>		16	47.9	115.7	5.8	11	181.7	19.8	105.5	15.9	14.3	--
<b>Metals (mg/L)</b>												
Arsenic, Dissolved		0.0196	ND	ND	0.0059	ND	ND	ND	<0.100	<0.0100	0.0135	--
Barium, Dissolved		0.219	0.14	0.053	0.086	0.097	0.09	0.106	0.079	0.103	0.0939	--
Cadmium, Dissolved		0.015	ND	ND	ND	ND	ND	<0.030	<0.00100	<0.001	<0.001	--
Chromium, Dissolved total		ND	0.011	ND	ND	ND	ND	<0.040	<0.0100	<0.01	<0.01	--
Cyanide, Total		ND	ND	ND	ND	ND	ND	<0.005	<0.00500	<0.005	<0.005	--
Lead, Dissolved		ND	ND	0.0038	ND	ND	ND	<0.080	<0.00500	<0.00500	<0.005	--
Nickel, Dissolved		ND	ND	ND	ND	0.007	ND	ND	0.011	<0.0500	<0.05	--
Zinc, Dissolved		0.047	ND	0.055	ND	ND	ND	<0.050	0.0210	<0.02	<0.02	--

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter ( $\mu\text{g/L}$ ).

Metals reported in milligrams per liter (mg/L).

October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.

October 2003, October 2004, and October 2005 data validated to Level II; no flags were required for the data in this table collected on those dates.

-- = No PRG assigned.

< = Not detected greater than the reporting limit provided.

**Bold** = Analyte detected greater than the laboratory reporting limit.

*Italics* = Reporting limit greater than the corresponding PRG.

NA = Not analyzed.

ND = Not detected greater than the method detection limit.

Shaded = Analyte detected greater than the corresponding PRG.

**Table 3**  
**Monitoring Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled	MONITORING WELL MW-16S (Aboveground Storage Tank Area)											PRG (µg/L)	
		8/6/1992	11/7/1995	11/6/1996	6/11/1997	10/15/1998	10/14/1999	10/2/2000	11/1/2001	10/23/2002	10/15/2003	10/19/2004	10/13/2005	
<b>VOCs (µg/L)</b>														
Acetone		ND	NA	NA	NA	NA	ND	ND	ND	ND	<20.0	<20.0	<20	3,650
Benzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	0.617
Bromomethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	<2.0	<2	--
2-Butanone (MEK)		ND	NA	NA	NA	NA	NA	NA	NA	NA	<12.5	<20.0	<20	--
n-Butylbenzene		NA	ND	NA	NA	NA	ND	ND	ND	ND	<1.0	<1.0	<1	--
Carbon Disulfide		ND	NA	NA	NA	NA	ND	ND	ND	ND	<1.0	<20.0	<20	768
Chloroethane		ND	ND	NA	ND	ND	ND	ND	ND	ND	<5.0	<2.0	<2	--
Chloroform		ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	0.274
Dibromomethane		NA	ND	NA	NA	NA	ND	ND	ND	ND	<1.0	<1.0	<1	--
1,1-Dichloroethane		55	85	26	58	37	38	ND	6.1	30.3	63.1	26	21	973
1,2-Dichloroethane		ND	1.4	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	--
1,1-Dichloroethylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	0.0167
cis-1,2-Dichloroethylene		NA	190	50	75	NA	93	93	18.5	87.4	147	73	22	70
trans-1,2-Dichloroethylene		NA	ND	1.3	5.3	NA	NA	ND	ND	2.5	11.0	2.2	1.1	100
1,2-Dichloroethylene, Total		41	190	51.3	80.3	130	93	93	18.5	89.9	158	75.2	94.1	(170)
1,2-Dichloropropane		ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	1.25
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	700
4-Methyl-2-pentanone (MIBK)		ND	NA	NA	NA	NA	ND	ND	ND	ND	<12.5	20.0	<20	487
Tetrachloroethylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	1.43
Toluene		ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	1,000
1,1,1-Trichloroethane		8	2.7	1	2.9	ND	6.9	ND	1.4	10.2	56.2	17	6.7	200
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	0.314
Trichloroethylene		ND	19	ND	ND	ND	17	ND	1.0	ND	2.2	<1.0	2.54	--
1,2,4-Trimethylbenzene		NA	ND	NA	NA	NA	ND	ND	ND	ND	<1.0	NA	<5	--
Vinyl Chloride		100	31	19	16	32	32	ND	ND	16.5	<1.0	1.0	0.0283	--
Xylenes, Total		ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	828
<b>TOTAL VOCs</b>		204	327.0	97.3	157.2	251	152.9	93	27.0	146.0	279.5	146.8	135.8	--
<b>Metals (mg/L)</b>														
Arsenic, Dissolved		<b>0.0025</b>	<b>0.003</b>	ND	ND	ND	<b>0.021</b>	ND	ND	ND	<0.100	<0.0100	<0.01	--
Barium, Dissolved		<b>0.05</b>	<b>0.06</b>	<b>0.065</b>	ND	<b>0.054</b>	<b>0.059</b>	<b>0.11</b>	<b>0.034</b>	<b>0.146</b>	<b>0.081</b>	<b>0.0755</b>	<b>0.102</b>	--
Cadmium, Dissolved		ND	ND	ND	<b>0.00024</b>	ND	ND	ND	ND	ND	<0.030	<0.00100	<0.001	--
Chromium, Dissolved total		ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.040	<0.0100	<0.01	--
Cyanide, Total		ND	ND	ND	<b>0.011</b>	ND	ND	<b>0.009</b>	ND	ND	<b>0.021</b>	<0.00500	<0.005	--
Lead, Dissolved		ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.080	<0.00500	<0.005	--
Nickel, Dissolved		ND	ND	ND	ND	ND	ND	<b>0.009</b>	ND	ND	<0.010	<0.0500	<0.05	--
Zinc, Dissolved		<b>0.038</b>	ND	ND	<b>0.028</b>	ND	ND	ND	ND	<b>0.06</b>	<0.050	<0.0200	<b>0.0242</b>	--

**Notes:**

In samples where total 1,2-dichloroethylene has been listed, cis-1,2-dichloroethylene is included in that total.

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).

Metals reported in milligrams per liter (mg/L).

October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.

October 2003, October 2004, and October 2005 data validated to Level II; no flags were required for the data in this table collected on those dates.

-- = No PRG assigned.

< = Not detected greater than the reporting limit provided.

**Bold** = Analyte detected greater than the laboratory reporting limit.

*Italics* = Reporting limit greater than the corresponding PRG.

NA = Not analyzed.

ND = Not detected greater than the method detection limit.

Shaded = Analyte detected greater than the corresponding PRG.

**Table 3**  
**Monitoring Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled	MONITORING WELL MW-18S (Aboveground Storage Tank Area)		PRG ( $\mu\text{g/L}$ )
		8/1/1992 <sup>(1)</sup>	11/1/2001	
<b>VOCs (<math>\mu\text{g/L}</math>)</b>				
Acetone		ND	ND	3,650
Benzene		ND	ND	0.617
Bromomethane		ND	ND	--
2-Butanone (MEK)		NA	NA	--
n-Butylbenzene		ND	ND	--
Carbon Disulfide		ND	ND	768
Chloroethane		ND	ND	--
Chloroform		ND	ND	0.274
Dibromomethane		ND	ND	--
1,1-Dichloroethane		ND	ND	973
1,2-Dichloroethane		ND	ND	--
1,1-Dichloroethene		ND	ND	0.0167
cis-1,2-Dichloroethene		ND	ND	70
trans-1,2-Dichloroethene		ND	ND	100
1,2-Dichloroethene, Total		ND	ND	(170)
1,2-Dichloropropane		ND	ND	1.25
Ethylbenzene		ND	ND	700
4-Methyl-2-pentanone (MIBK)		ND	ND	487
Tetrachloroethene		ND	ND	1.43
Toluene		ND	ND	1,000
1,1,1-Trichloroethane		ND	ND	200
1,1,2-Trichloroethane		ND	ND	0.314
Trichloroethene		ND	ND	2.54
1,2,4-Trimethylbenzene		ND	ND	--
Vinyl Chloride		ND	1.6	0.0283
Xylenes, Total		ND	ND	828
<b>TOTAL VOCs</b>		ND	1.6	--
<b>Metals (mg/L)</b>				
Arsenic, Dissolved		ND	ND	--
Barium, Dissolved		0.177	0.084	--
Cadmium, Dissolved		ND	ND	--
Chromium, Dissolved total		ND	ND	--
Cyanide, Total		NA	NA	--
Lead, Dissolved		ND	ND	--
Nickel, Dissolved		ND	ND	--
Zinc, Dissolved		5.56	0.2	--

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter ( $\mu\text{g/L}$ ).

Metals reported in milligrams per liter (mg/L).

<sup>(1)</sup> August 1992 data from Technical Memorandum (Warzyn, November 1992).

-- = No PRG assigned.

**Bold** = Analyte detected greater than the laboratory reporting limit.

NA = Not analyzed.

ND = Not detected greater than the method detection limit.

Shaded = Analyte detected greater than the corresponding PRG.

**Table 3**  
**Monitoring Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled	MONITORING WELL MW-83AS (Southeast Area)																				PRG (µg/L)			
		3/1988 <sup>(D)</sup>	8/1988 <sup>(D)</sup>	7/23/1992	11/08/1995	8/27/1996	6/13/1997	11/18/1997	4/21/1998	10/15/1998	4/12/1999	10/13/1999	5/04/2000	10/02/2000	4/19/2001	10/31/2001	4/23/2002	10/24/2002	4/16/2003	10/15/2003	4/20/2004	10/20/2004	4/19/2005	10/12/2005	
<b>VOCs (µg/L)</b>																									
Acetone	ND	ND	ND	NA	NA	NA	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	<20.0	<20.0	<20	<20	<20	<20	3,650	
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<1	0.617	
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<5.0	NA	<2.0	<2.0	<2	<2	--	
2-Butanone (MEK)	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<12.5	<12.5	<20	<20	<20	<20	--	
n-Butylbenzene	ND	ND	NA	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<1	--	
Carbon Disulfide	ND	ND	ND	NA	NA	NA	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<20	<20	<20	<20	768	
Chloroethane	ND	ND	ND	ND	ND	5.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<5.0	<5.0	<2.0 (J)	<2.0	2.3	2.1	--	
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	<1	0.274	
Dibromomethane	ND	ND	NA	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	<1	--	
1,1-Dichloroethane	ND	ND	ND	48	72	51	56	ND	42	39	43	38	26	ND	31	29.1	33.3	18.1	23.7	21	23	24	19	973	
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	<1	--	
1,1-Dichloroethylene	ND	ND	ND	ND	ND	4.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	<1	0.0167	
cis-1,2-Dichloroethylene	ND	ND	NA	15,000	15,000	11,000	NA	5,200	1,300	4,000	3,400	2,200	1,500	250	1,730	1,190	1,190	698	839	700	800	570	70	--	
trans-1,2-Dichloroethylene	ND	ND	NA	68	110	56	NA	ND	32	21	17	14	5.9	ND	21	12.6	2.3	2.5	<1.0	1.6	1.5	2.2	1.3	100	--
1,2-Dichloroethylene, Total	ND	ND	12,000	15,068	15,110	11,056	8,700	5,200	1,332	4,021	3,412	2,214	1,505.9	750	1,751	1,202.6	1,192	700.5	839	701	801.5	571.3	(170)	--	
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	<1	1.25	
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	<1	700	
4-Methyl-2-pentanone (MIBK)	ND	ND	ND	NA	NA	NA	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	<12.5	<12.5	<20	<20	<20	<20	487	
Tetrachloroethylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	<1	1.43	
Toluene	ND	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	<1	1,000	
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	<1	200	
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1	<1	<1	0.314	
Trichloroethylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	1.0	<1.0	<1	<1	2.54	
1,2,4-Trimethylbenzene	ND	ND	NA	ND	ND	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	NA	NA	<5	<5	--	
Vinyl Chloride	110	110	120	170	1,600	1,400	1,400	900	600	500	530	550	300	200	300	300	300	338	338	338	338	338	338	0.0283	
Xylenes, Total	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1	<1	828	
<b>TOTAL VOCs</b>	<b>110</b>	<b>140.7</b>	<b>13,200</b>	<b>16,816</b>	<b>16,782</b>	<b>12,516.2</b>	<b>10,156</b>	<b>6,100</b>	<b>1,984</b>	<b>5,050</b>	<b>4,290</b>	<b>2,802</b>	<b>1,911.9</b>	<b>970</b>	<b>2,181</b>	<b>1,618.7</b>	<b>1,672.6</b>	<b>1,056.6</b>	<b>1,348.7</b>	<b>1,093.6</b>	<b>1,464.5</b>	<b>1,500</b>	<b>1,112.4</b>	--	
<b>Metals (mg/L)</b>																									
Arsenic, Dissolved	ND	ND	ND	0.003	ND	0.0022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.10	<0.100	<0.0100	<0.0100	0.0123	<0.01	--	
Barium, Dissolved	0.186	0.117	0.111	0.18	0.09	ND	ND	0.048	0.055	0.088	0.09	0.094	0.068	0.063	0.17	0.068	0.16	0.125	0.078	0.0910	0.1090	0.116	0.112	--	
Cadmium, Dissolved	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.030	<0.030	<0.005	<0.00100	<0.001	<0.001	--	
Chromium, Dissolved total	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.040	<0.040	<0.005	<0.0100	<0.01	<0.01	--	
Cyanide, Total	ND	0.022	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.005	0.0089	<0.005	<0.00500	<0.005	<0.005	--	
Lead, Dissolved	ND	ND	ND	ND	0.011	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.080	<0.080	<0.005	<0.00500	<0.005	<0.005	--	
Nickel, Dissolved	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.010	<0.010	<0.0500	<0.050	<0.05	<0.05	--	
Zinc, Dissolved	ND	0.0054	ND	ND	ND	0.041	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.063	<0.050	<0.050	<0.0200	<0.0200	0.0314	<0.02	--

### Notes:

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.

**Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter ( $\mu\text{g/L}$ ).**

Metals reported in milligrams per liter (mg/L)

<sup>(1)</sup> Possible mislabeling of sample occurred in 1988.

October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.

October 2003, October 2004, April 2005, October 2005 data validated to Level II; no flags were required for the data in this table collected on those dates.

April 2003, October 2003, October 2004, April 2005, October 2005 data validated to Level II; no flags were required for the data in this table collected on those dates.

April 2004 data validated to Level II, (J) – estimated

**Table 3**  
**Monitoring Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled	MONITORING WELL MW-83AD (Southeast Area)												PRG ( $\mu\text{g/L}$ )		
		3/1988	8/1988	7/31/1992	11/8/1995	11/6/1996	6/13/1997	10/15/1998	10/13/1999	10/2/2000	10/31/2001	10/24/2002	10/15/2003	10/20/2004		
<b>VOCs (<math>\mu\text{g/L}</math>)</b>																
Acetone		ND	ND	ND	NA	NA	NA	NA	NA	ND	ND	<20.0	<20.0	<20	3,650	
Benzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	0.617	
Bromomethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	<2.0	<2	--	
2-Butanone (MEK)		ND	ND	ND	NA	NA	NA	NA	NA	ND	ND	<12.5	<20.0	<20	--	
n-Butylbenzene		ND	ND	NA	ND	NA	NA	NA	ND	ND	ND	<1.0	<1.0	<1	--	
Carbon Disulfide		ND	ND	ND	NA	NA	NA	NA	ND	ND	ND	<1.0	<20.0	<20	768	
Chloroethane		ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	<5.0	<2.0	<2	--	
Chloroform		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	0.274	
Dibromomethane		ND	ND	NA	ND	NA	NA	NA	ND	ND	ND	<1.0	<1.0	<1	--	
1,1-Dichloroethane		ND	ND	0.6	ND	1.5	ND	ND	ND	ND	ND	<1.0	<1.0	<1	973	
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	--	
1,1-Dichloroethene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	0.0167	
cis-1,2-Dichloroethene		ND	NA	NA	140	88	60	38	33	8.9	9.3	3.5	2.4	2	70	
trans-1,2-Dichloroethene		ND	NA	NA	ND	ND	ND	ND	NA	ND	ND	<1.0	<1.0	<1	100	
1,2-Dichloroethene, Total		ND	7.2	10	140	88	60	38	33	8.9	9.3	3.5	2.4	2	(170)	
1,2-Dichloropropane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	1.25	
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	700	
4-Methyl-2-pentanone (MIBK)		ND	ND	ND	NA	NA	NA	NA	ND	ND	ND	<12.5	<20.0	<20	487	
Tetrachloroethene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	1.43	
Toluene		ND	0.9	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	1,000	
1,1,1-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	200	
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	0.314	
Trichloroethene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	2.54	
1,2,4-Trimethylbenzene		ND	ND	NA	ND	NA	NA	NA	ND	ND	ND	<1.0	NA	<5	--	
Vinyl Chloride		ND	38	53	110	72	54	38	33	8.9	9.3	3.5	<1.0	<1.0	0.0283	
Xylenes, Total		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	828	
<b>TOTAL VOCs</b>		4	46.1	13.6	250	163	114	46.8	81	24.9	13.2	9.3	5.8	2.2	3.2	--
<b>Metals (mg/L)</b>																
Arsenic, Dissolved		NA	NA	ND	0.004	ND	ND	ND	ND	ND	ND	<0.100	<0.0100	0.0161	--	
Barium, Dissolved		NA	NA	0.022	0.25	0.24	0.27	0.17	0.19	0.17	0.16	0.288	0.217	0.149	0.213	
Cadmium, Dissolved		NA	NA	0.005	ND	ND	ND	ND	ND	ND	ND	<0.030	<0.00100	<0.001	--	
Chromium, Dissolved total		NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	<0.040	<0.0100	<0.01	--	
Cyanide, Total		NA	NA	0.07	ND	ND	0.014	ND	ND	ND	ND	<0.005	<0.00500	<0.005	--	
Lead, Dissolved		NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	<0.080	<0.00500	<0.005	--	
Nickel, Dissolved		NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	<0.010	<0.0500	<0.05	--	
Zinc, Dissolved		NA	NA	ND	0.01	ND	0.02	0.022	0.02	ND	0.069	0.057	<0.050	0.0287	<0.02	

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter ( $\mu\text{g/L}$ ).

Metals reported in milligrams per liter (mg/L).

October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.

October 2003, October 2004, and October 2005 data validated to Level II; no flags were required for the data in this table collected on those dates.

-- = No PRG assigned.

< = Not detected greater than the reporting limit provided.

**Bold** = Analyte detected greater than the laboratory reporting limit.

*Italics* = Reporting limit greater than the corresponding PRG.

NA = Not analyzed.

ND = Not detected greater than the method detection limit.

Shaded = Analyte detected greater than the corresponding PRG.

**Table 3**  
**Monitoring Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled	MONITORING WELL MW-83B (Northeast Area)											PRG (µg/L)	
		3/1988	7/31/1992	6/7/1996	11/6/1996	6/12/1997	10/15/1998	10/2/2000	10/31/2001	10/23/2002	10/15/2003	10/20/2004	10/12/2005	
<b>VOCs (µg/L)</b>														
Acetone		270	ND	ND	NA	NA	ND	ND	ND	ND	<20.0	<20.0	<20	3,650
Benzene		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	0.617	
Bromomethane		ND	ND	ND	ND	ND	ND	ND	ND	NA	<2.0	<2	--	
2-Butanone (MEK)		23	ND	ND	NA	NA	NA	NA	NA	<12.5	<20.0	<20	--	
n-Butylbenzene		ND	NA	ND	NA	NA	ND	ND	ND	<1.0	<1.0	<1	--	
Carbon Disulfide		ND	NA	ND	NA	NA	ND	ND	ND	<1.0	<20.0	<20	768	
Chloroethane		ND	ND	ND	NA	ND	ND	ND	ND	<5.0	<2.0	<2	--	
Chloroform		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	0.274	
Dibromomethane		ND	NA	ND	NA	NA	ND	ND	ND	<1.0	<1.0	<1	--	
1,1-Dichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	973	
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	--	
1,1-Dichloroethene		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	0.0167	
cis-1,2-Dichloroethene		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	70	
trans-1,2-Dichloroethene		ND	NA	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	100	
1,2-Dichloroethene, Total		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	(170)	
1,2-Dichloropropane		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	1.25	
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	700	
4-Methyl-2-pentanone (MIBK)		ND	ND	ND	NA	NA	ND	ND	ND	<12.5	<20.0	<20	487	
Tetrachloroethene		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	1.43	
Toluene		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	1,000	
1,1,1-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	200	
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	0.314	
Trichloroethene		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	2.54	
1,2,4-Trimethylbenzene		ND	NA	ND	NA	NA	ND	ND	ND	<1.0	NA	<5	--	
Vinyl Chloride		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	0.0283	
Xylenes, Total		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1	828	
<b>TOTAL VOCs</b>		293	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	
<b>Metals (mg/L)</b>														
Arsenic, Dissolved		ND	ND	0.003	0.0031	0.0027	ND	0.0054	ND	ND	<0.100	<0.0100	<0.01	--
Barium, Dissolved		ND	ND	0.16	0.22	0.19	0.16	0.26	0.18	0.227	0.257	0.225	0.203	
Cadmium, Dissolved		ND	0.005	ND	ND	ND	ND	ND	ND	<0.030	<0.00100	<0.001	--	
Chromium, Dissolved total		ND	ND	ND	ND	ND	ND	ND	ND	<0.040	<0.0100	<0.01	--	
Cyanide, Total		ND	0.019	ND	ND	ND	ND	ND	ND	0.0059	<0.00500	<0.005	--	
Lead, Dissolved		ND	ND	ND	ND	ND	ND	ND	ND	<0.080	<0.00500	<0.005	--	
Nickel, Dissolved		ND	ND	0.02	0.021	ND	ND	ND	ND	<0.010	<0.0500	<0.05	--	
Zinc, Dissolved		ND	ND	0.1	0.081	0.029	ND	ND	ND	<0.050	0.0252	0.027	--	

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).

Metals reported in milligrams per liter (mg/L).

October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.

October 2003, October 2004, and October 2005 data validated to Level II; no flags were required for the data in this table collected on those dates.

-- = No PRG assigned.

< = Not detected greater than the reporting limit provided.

**Bold** = Analyte detected greater than the laboratory reporting limit.

*Italics* = Reporting limit greater than the corresponding PRG.

NA = Not analyzed.

ND = Not detected greater than the method detection limit.

**Table 3**  
**Monitoring Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled	MONITORING WELL MW-83DS (Formerly GW-83E; Southeast Area)							PRG ( $\mu\text{g/L}$ )
		8/1988	11/1/2001	4/23/2002	10/24/2002	10/17/2003	10/22/2004	10/14/2005	
<b>VOCs (<math>\mu\text{g/L}</math>)</b>									
Acetone		ND	ND	ND	ND	<20.0	<20.0	<20	3,650
Benzene		ND	ND	ND	<1.0	<1.0	<1	0.617	
Bromomethane		ND	ND	ND	NA	<2.0	<2	--	
2-Butanone (MEK)		ND	NA	NA	NA	14.4	<20.0	<20	--
n-Butylbenzene		ND	ND	ND	ND	<1.0	<1.0	<1	--
Carbon Disulfide		ND	ND	ND	ND	<1.0	<20.0	<20	768
Chloroethane		ND	ND	ND	ND	<5.0	<2.0	<2	--
Chloroform		ND	ND	ND	ND	<1.0	<1.0	<1	0.274
Dibromomethane		ND	ND	ND	ND	<1.0	<1.0	<1	--
1,1-Dichloroethane		ND	1.1	ND	ND	<1.0	<1.0	<1	973
1,2-Dichloroethane		ND	ND	ND	ND	<1.0	<1.0	<1	--
1,1-Dichloroethene		ND	ND	ND	ND	<1.0	<1.0	<1	0.0167
cis-1,2-Dichloroethene		ND	191	350	320	239	190	110	70
trans-1,2-Dichloroethene		ND	1.1	ND	ND	1.1	<1.0	<1	100
1,2-Dichloroethene, Total		ND	192	350	320	240.1	190	110	(170)
1,2-Dichloropropane		ND	ND	ND	1.0	<1.0	<1.0	<1	1.25
Ethylbenzene		ND	ND	ND	ND	<1.0	<1.0	<1	700
4-Methyl-2-pentanone (MIBK)		ND	ND	ND	ND	<12.5	<20.0	<20	487
Tetrachloroethylene		ND	ND	ND	ND	<1.0	<1.0	<1	1.43
Toluene		ND	ND	ND	ND	<1.0	<1.0	<1	1,000
1,1,1-Trichloroethane		ND	ND	ND	ND	<1.0	<1.0	<1	200
1,1,2-Trichloroethane		ND	ND	ND	ND	<1.0	<1.0	<1	0.314
Trichloroethylene		ND	ND	ND	ND	<1.0	<1.0	<1	2.54
1,2,4-Trimethylbenzene		ND	ND	ND	ND	<1.0	NA	<5	--
Vinyl Chloride		ND	30	120	183	79	25	15	0.0283
Xylenes, Total		ND	ND	ND	ND	<1.0	<1.0	<1	828
<b>TOTAL VOCs</b>		ND	209.2	470	509	334.4	266	164	--
<b>Metals (mg/L)</b>									
Arsenic, Dissolved		0.003	ND	ND	ND	<0.100	<0.0100	<0.01	--
Barium, Dissolved		0.211	0.077	0.12	0.153	0.106	0.0947	0.139	--
Cadmium, Dissolved		ND	ND	ND	ND	<0.030	<0.0100	<0.001	--
Chromium, Dissolved total		ND	ND	ND	ND	<0.040	<0.0100	<0.01	--
Cyanide, Total		ND	NA	NA	NA	NA	NA	NA	--
Lead, Dissolved		ND	ND	0.16	ND	<0.080	<0.00500	<0.005	--
Nickel, Dissolved		ND	ND	ND	ND	<0.010	<0.0500	<0.05	--
Zinc, Dissolved		ND	0.062	ND	ND	<0.050	<0.0200	<0.02	--

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.

Volatile organic compounds (VOC's) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter ( $\mu\text{g/L}$ ).

Metals reported in milligrams per liter (mg/L).

October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.

October 2003, October 2004, and October 2005 data validated to Level II; no flags were required for the data in this table collected on those dates.

-- = No PRG assigned.

< = Not detected greater than the reporting limit provided.

**Bold** = Analyte detected greater than the laboratory reporting limit.

*Italics* = Reporting limit greater than the corresponding PRG.

NA = Not analyzed.

ND = Not detected greater than the method detection limit.

Shaded = Analyte detected greater than the corresponding PRG.

**Table 3**  
**Monitoring Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled	MONITORING WELL MW-83DD (Formerly GW-83D; Southeast Area)		PRG ( $\mu\text{g/L}$ )
		8/1988	11/6/2001	
<b>VOCs (<math>\mu\text{g/L}</math>)</b>				
Acetone		ND	ND	3,650
Benzene		ND	ND	0.617
Bromomethane		ND	ND	--
2-Butanone (MEK)		ND	NA	--
n-Butylbenzene		ND	ND	--
Carbon Disulfide		ND	ND	768
Chloroethane		ND	ND	--
Chloroform		ND	ND	0.274
Dibromomethane		ND	ND	--
1,1-Dichloroethane		ND	ND	973
1,2-Dichloroethane		ND	ND	--
1,1-Dichloroethene		ND	ND	0.0167
cis-1,2-Dichloroethene		ND	ND	70
trans-1,2-Dichloroethene		ND	ND	100
1,2-Dichloroethene, Total		ND	ND	(170)
1,2-Dichloropropane		ND	ND	1.25
Ethylbenzene		ND	ND	700
4-Methyl-2-pentanone (MIBK)		ND	ND	487
Tetrachloroethylene		ND	ND	
Toluene		ND	ND	1,000
1,1,1-Trichloroethane		ND	ND	200
1,1,2-Trichloroethane		ND	ND	0.314
Trichloroethylene		ND	ND	2.54
1,2,4-Trimethylbenzene		ND	ND	--
Vinyl Chloride		ND	ND	0.0283
Xylenes, Total		ND	ND	828
<b>TOTAL VOCs</b>		ND	ND	--
<b>Metals (mg/L)</b>				
Arsenic, Dissolved		<b>0.057</b>	ND	--
Barium, Dissolved		<b>0.009</b>	<b>0.05</b>	--
Cadmium, Dissolved		ND	ND	--
Chromium, Dissolved total		ND	ND	--
Cyanide, Total		<b>0.022</b>	NA	--
Lead, Dissolved		<b>0.0023</b>	ND	--
Nickel, Dissolved		ND	ND	--
Zinc, Dissolved		<b>0.004</b>	ND	--

**Notes:**

In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter ( $\mu\text{g/L}$ ).

Metals reported in milligrams per liter (mg/L).

**Bold** = Analyte detected greater than the laboratory reporting limit.

NA = Not analyzed.

ND = Not detected greater than the method detection limit.

-- = No PRG assigned.

**Table 4**  
**Groundwater Treatment System Flow Summary**  
**Wayne Reclamation & Recycling**

July 2005		August 2005		September 2005		October 2005		November 2005		December 2005	
DATE	FLOW (gpd)	DATE	FLOW (gpd)	DATE	FLOW (gpd)	DATE	FLOW (gpd)	DATE	FLOW (gpd)	DATE	FLOW (gpd)
1	56,000	1	117,500	1	83,800	1	148,600	1	143,700	1	122,800
2	56,000	2	117,500	2	105,800	2	148,600	2	143,700	2	122,800
3	56,000	3	117,500	3	120,500	3	148,600	3	134,300	3	122,800
4	56,000	4	117,500	4	120,500	4	148,600	4	121,400	4	122,800
5	56,000	5	117,500	5	120,500	5	148,300	5	143,700	5	122,800
6	56,000	6	117,500	6	120,500	6	148,600	6	143,700	6	122,800
7	56,000	7	117,500	7	120,800	7	131,000	7	143,700	7	122,800
8	49,000	8	117,500	8	120,800	8	148,600	8	125,900	8	123,000
9	70,000	9	117,900	9	120,800	9	148,600	9	125,900	9	123,000
10	70,000	10	117,900	10	120,800	10	148,600	10	125,900	10	123,000
11	70,000	11	117,900	11	120,800	11	168,200	11	125,900	11	123,000
12	64,000	12	117,900	12	120,800	12	168,200	12	125,900	12	112,200
13	70,000	13	117,900	13	120,800	13	168,200	13	125,900	13	123,000
14	70,000	14	117,900	14	127,400	14	167,000	14	125,900	14	123,000
15	70,000	15	117,400	15	132,900	15	168,200	15	125,900	15	110,700
16	64,000	16	117,400	16	132,900	16	168,200	16	63,800	16	110,700
17	64,000	17	117,400	17	132,900	17	169,500	17	63,800	17	110,700
18	64,000	18	117,400	18	132,900	18	168,100	18	63,800	18	110,700
19	64,000	19	117,400	19	132,900	19	154,100	19	63,800	19	86,800
20	64,000	20	117,400	20	132,900	20	169,500	20	63,800	20	86,800
21	64,000	21	117,400	21	144,300	21	169,500	21	63,800	21	86,800
22	64,000	22	117,400	22	144,300	22	169,500	22	61,900	22	80,900
23	105,000	23	122,800	23	144,300	23	169,500	23	96,900	23	80,900
24	105,000	24	122,800	24	144,300	24	169,500	24	96,900	24	80,900
25	105,000	25	122,800	25	144,300	25	165,400	25	96,900	25	80,900
26	105,000	26	122,800	26	144,300	26	169,800	26	96,900	26	80,900
27	100,000	27	122,800	27	144,300	27	169,800	27	96,900	27	80,900
28	105,000	28	122,800	28	144,300	28	169,800	28	106,000	28	80,900
29	105,000	29	122,800	29	135,300	29	169,800	29	106,000	29	80,900
30	105,000	30	122,800	30	144,300	30	169,800	30	106,000	30	101,800
31	105,000	31	122,800			31	169,800			31	101,800
<b>Total Monthly Flow (gallons)</b>	2,313,000	3,691,800	3,876,000	4,999,500	3,228,600	3,263,800					
<b>Average Daily Flow (gallons)</b>	74,613	119,090	129,200	161,274	107,620	105,284	<b>Period</b>	<b>Total Gallons Treated</b>			
<b>Total Plant Run Time (minutes)</b>	44,047	44,640	42,435	44,276	42,839	44,514	6 Months	21,372,700			
<b>Av. Flow During Actual Plant Run Time (gpm)</b>	53	83	91	113	75	73	12 Months	42,745,400			
<b>Notes:</b>											
gpd = Gallons per day.	Av. = Average.			gpm = Gallons per minute							
Av. Flow is calculated by dividing the total monthly flow by the total number of operational days for the given month.											

Period	Total Gallons Treated
6 Months	21,372,700
12 Months	42,745,400
Since 1995	267,765,941

**Table 5**  
**Summary of Monitoring Well Construction Details**  
**Wayne Reclamation & Recycling**

Well Identification	TOIC Elevations 2001 - 2003	Grd Surface Elevation (msl)	Total Depth (bgs)	Well Diameter (inches)	Screen Length (feet)	Bottom Screen Elevation (msl)	Top Screen Elevation (msl)	Slot Size (inches)	General Location	Well Installer	Installation Date
MW-1D	826.08	823.81	150.00	2.00	10.00	673.81	683.81	0.010	Southeast Area	Montgomery Watson	June-96
MW-2S	825.34	822.90	23.00	2.00	10.00	799.90	809.90	0.010	Southeast Area	Warzyn	February-88
MW-3S	824.06	820.82	20.00	2.00	10.00	800.82	810.82	0.010	Southeast Area	Warzyn	February-88
MW-4S	843.06	840.04	37.00	2.00	10.00	803.04	813.04	0.010	RW-4 Area	Warzyn	February-88
MW-5S	833.02	830.19	25.00	2.00	10.00	805.19	815.19	0.010	Cemetery	Warzyn	February-88
MW-7S	836.12	833.70	31.00	2.00	10.00	802.70	812.70	0.010	RW-4 area	Warzyn	February-88
MW-8S	835.52	832.11	30.00	2.00	10.00	802.11	812.11	0.010	AST area	Warzyn	February-88
MW-8D	834.11	831.57	150.00	2.00	10.00	681.57	691.57	0.010	AST Area	Warzyn	August-88
MW-9S	825.44	822.43	20.00	2.00	10.00	802.43	812.43	0.010	AST Area	Warzyn	February-88
MW-10S	823.15	821.66	16.00	2.00	10.00	805.66	815.66	0.010	Southeast Area	Warzyn	February-88
MW-11S	825.08	823.26	34.00	2.00	10.00	789.26	799.26	0.010	Southeast Area	Warzyn	February-88
MW-13S <sup>(1)</sup>	826.40	823.58	25.00	2.00	10.00	798.58	808.58	0.010	Southeast Area	Warzyn	July-88
MW-13D <sup>(1)</sup>	826.44	823.86	145.00	2.00	10.00	678.86	688.86	0.010	Southeast Area	Warzyn	July-88
MW-14S	821.30	819.11	18.90	2.00	10.00	800.21	810.21	0.010	AST Area	Warzyn	July-88
MW-15S	827.64	825.00	25.00	2.00	10.00	800.00	810.00	0.010	AST Area	Warzyn	July-90
MW-16S	827.41	825.23	25.00	2.00	10.00	800.23	810.23	0.010	AST Area	Warzyn	July-90
MW-17S	826.56	824.66	40.00	2.00	10.00	784.66	794.66	0.007	AST Area	Warzyn	August-92
MW-18S	824.16	821.54	32.50	2.00	10.00	789.04	799.04	0.007	AST Area	Warzyn	July-92
MW-19S <sup>(1)</sup>	832.07	830.20	25.00	2.00	10.00	805.20	815.20	0.010	AST Area	Warzyn	July-92

Notes:

TOIC = Top of inner well casing; msl = above mean sea level; bgs = below ground surface; AST = Aboveground Storage Tank; MW = monitoring well; RW = recovery well.

<sup>(1)</sup> TOIC elevations based on InSite, Inc. survey of 7/2/2002, following repair of those wells.

Depth to groundwater measured in feet below TOIC.

Prior to 2001, TOIC elevations based on Ayres-Lewis-Norris-May, Inc. survey of 10/10/1997.

TOIC and surface elevations based on Benchmark Surveying, Inc. surveys of 7/2/2001, 10/25/2001, and 5/1/2003, except where noted.

**Table 5**  
**Summary of Monitoring Well Construction Details**  
**Wayne Reclamation & Recycling**

Well Identification	TOIC Elevations 2001 - 2003	Grd Surface Elevation (msl)	Total Depth (bgs)	Well Diameter (inches)	Screen Length (feet)	Bottom Screen Elevation (msl)	Top Screen Elevation (msl)	Slot Size (inches)	General Location	Well Installer	Installation Date
P-1	834.28	832.29	28.00	2.00	10.00	804.29	814.29	0.010	RW-4 Area	Warzyn	July-88
P-2	825.49	822.90	18.00	2.00	10.00	804.90	814.90	0.010	Southeast Area	Warzyn	July-88
P-3	823.48	820.82	20.00	2.00	10.00	800.82	810.82	0.010	Southeast Area	Warzyn	July-88
P-4	822.67	820.01	15.00	2.00	10.00	805.01	815.01	0.010	AST Area	Warzyn	July-88
MW-83AS <sup>(2)</sup>	826.13	824.39	28.22	2.00	5.00	796.17	801.17	-	Southeast Area	Peerless - Midwest	May-83
MW-83AD <sup>(2)</sup>	826.15	824.36	46.95	2.00	4.00	777.41	781.41	-	Southeast Area	Peerless - Midwest	May-83
MW-83B	840.55	838.30	60.00	2.00	9.70	778.30	788.00	0.010	Southeast Area	Montgomery Watson	June-96
MW-83DS <sup>(2)</sup>	825.21	823.75	36.40	2.00	2.00	787.35	789.35	-	Southeast Area	Peerless - Midwest	May-83
MW-83DD <sup>(2)</sup>	825.30	823.82	52.93	2.00	0.50	770.89	771.39	-	Southeast Area	Peerless - Midwest	May-83
GM-1 <sup>(3)</sup>	841.08	838.98	34.84	2.00	-	804.14	-	-	Landfill	G&M	-
GM-2 <sup>(3)</sup>	833.30	830.51	38.86	2.00	-	791.65	-	-	Landfill	G&M	-
GM-3 <sup>(3)</sup>	822.87	820.65	27.75	2.00	-	792.90	-	-	Landfill	G&M	-
GM-4 <sup>(3)</sup>	827.40	824.11	27.95	2.00	-	796.16	-	-	Landfill	G&M	-
PZ-1 <sup>(4)</sup>	823.66	821.00	26.00	2.00	5.00	795.00	800.00	0.010	AST Area	MWH	December-02
PZ-2 <sup>(4)</sup>	825.73	823.80	17.00	2.00	5.00	806.80	811.80	0.010	Southeast Area	MWH	December-02
PZ-3 <sup>(4)</sup>	826.46	823.10	20.00	2.00	5.00	803.10	808.10	0.010	Southeast Area	MWH	December-02
PZ-4 <sup>(4)</sup>	825.52	821.45	17.00	2.00	5.00	804.45	809.45	0.010	RW-5 Area (Landfill)	MWH	December-02

**Notes:**

TOIC = Top of inner well casing; msl = above mean sea level; bgs = below ground surface; AST = Aboveground Storage Tank; MW = monitoring well; RW = recovery well; P and PZ = piezometer.

<sup>(2)</sup> Total depth and screen length revised based on InSite, Inc. field documentation study on 7/17/02.

<sup>(3)</sup> Groundwater elevations estimated for GM-1 through GM-4 for April 2001 reading; that same value is used for April 2003.

<sup>(4)</sup> Groundwater elevations from first round of measurements following piezometer installation, on 1/14/2003.

Depth to groundwater measured in feet below TOIC.

- = No data available.

Prior to 2001, TOIC elevations based on Ayres-Lewis-Norris-May, Inc. survey of 10/10/1997.

TOIC and surface elevations based on Benchmark Surveying, Inc. surveys of 7/2/2001, 10/25/2001, and 5/1/2003, except where noted.

**Table 6**  
**Summary of Groundwater Elevations**  
**Wayne Reclamation & Recycling**

Well Identification	Date:	07/15/2005	08/26/2005	09/29/2005	10/11/2005	11/03/2005	12/01/2005
	TOIC Elevation 2001 - 2003	Groundwater Elevation with Air Sparging System On (feet above mean sea level)					
MW-1D	826.08	--	--	--	807.49	--	--
MW-2S	825.34	807.67	807.58	806.91	807.53	807.43	807.13
MW-3S	824.06	806.99	807.07	807.36	807.41	807.28	806.94
MW-4S	843.06	--	--	--	809.35	--	--
MW-5S	833.02	--	--	--	810.50	--	--
MW-7S	836.12	--	--	--	809.05	--	--
MW-8S	835.52	--	--	--	809.29	--	--
MW-8D	834.11	--	--	--	807.75	--	--
MW-9S	825.44	810.07	--	--	808.79	--	--
MW-10S	823.15	807.33	807.25	807.27	807.23	807.22	806.94
MW-11S	825.08	807.58	807.76	807.44	807.73	807.68	807.19
MW-13S	826.40	810.84	810.75	810.76	810.69	810.61	810.63
MW-13D	826.44	--	--	--	808.38	--	--
MW-14S	821.30	--	--	--	809.93	--	--
MW-15S	827.64	--	--	--	809.26	--	--
MW-16S	827.41	--	--	--	809.40	--	--
MW-17S	826.56	--	--	--	809.92	--	--
MW-18S	824.16	--	--	--	809.98	--	--
MW-19S	832.07	--	--	--	809.55	--	--
P-1	834.28	--	--	--	809.33	--	--
P-2	825.49	--	--	--	809.54	--	--
P-3	823.48	--	--	--	808.99	--	--
P-4	822.67	--	--	--	808.91	--	--
MW-83AD	826.15	808.76	809.10	808.79	808.36	808.71	807.85
MW-83AS	826.13	807.57	807.52	806.86	807.43	807.34	807.07
MW-83B	840.55	--	--	--	809.35	--	--
MW-83DD	825.30	--	--	--	809.86	--	--
MW-83DS	825.21	809.91	810.10	809.93	809.70	809.75	809.22
GM-3	822.87	810.28	--	--	--	--	--
GM-4	827.40	809.92	--	--	--	--	--
PZ-1	823.66	810.03	--	--	--	--	--
PZ-2	825.73	810.82	--	--	--	--	--
PZ-3	826.46	810.59	--	--	--	--	--
PZ-4	825.52	810.28	--	--	--	--	--
G-1	808.82	810.10	--	--	--	--	--
G-2	810.10	810.98	--	--	--	--	--
G-3	809.91	811.03	--	--	--	--	--
G-4	810.21	811.05	--	--	--	--	--
RW-1	818.45	--	--	--	804.73	--	--
RW-2	824.29	--	--	--	809.37	--	--
RW-3	822.71	806.68	--	--	808.03	--	--
RW-4	833.24	--	--	--	805.16	--	--
RW-5	823.94	804.97	--	--	799.06	--	--
RW-6	820.71	--	--	--	805.02	--	--
RW-7	820.21	--	--	--	805.28	--	--
RW-8	821.86	--	--	--	802.84	--	--
RW-9	821.69	--	--	--	809.44	--	--
RW-10	822.55	--	--	--	806.00	--	--

**Notes:**

TOIC = Top of inner well casing; MW = monitoring well; P and PZ = piezometer; GM = landfill well; G = river gauge point; RW = recovery well.

TOIC and surface elevations based on Benchmark Surveying, Inc. surveys of 7/2/2001, 10/25/2001, and 5/1/2003, except where noted.

<sup>(1)</sup> TOIC elevations based on InSite, Inc. survey of 7/2/2002, following repair of those wells

**Table 7**  
**Columbia City Municipal Water Supply Well Results - Volatile Organic Compounds and Polychlorinated Biphenyls**  
**Wayne Reclamation & Recycling**

Date Sampled:	10/14/1998		12/9/1999		10/3/2000		10/31/2001		10/23/2002		10/16/2003		10/22/2004		10/18/2005		1/13/2006	
CONSTITUENT	PW-7	PW-8	PW-7	PW-8	PW-7	PW-8	PW-7	PW-8	PW-7	PW-8	PW-7	PW-8	PW-7	PW-8	PW-7	PW-8	PW-7	PW-8
<b>VOC's (<math>\mu\text{g/L}</math>)</b>																		
Benzene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	
Bromodichloromethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	
Bromoform	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	
Bromomethane	<10	<10	<10	<10	<10	<10	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<2.0	<2.0	<2	<2	<2	
2-Butanone (MEK)	<50	<50	<50	<50	<50	<50	<12.5	<12.5	<12.5	<12.5	<12.5	<20	<20	<20	<20	<20	<20	
Carbon Disulfide	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<20	<20	<20	<20	<20	<20	
Carbon Tetrachloride	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1		
Chlorobenzene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1		
Chlorodibromomethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	
Chloroethane	<10	<10	<10	<10	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<2.0	<2	<2	<2		
Chloroform	<5.0	<5.0	<20	<20	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1		
Chloromethane	<10	<10	<10	<10	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<2.0	<2	<2	<2		
1,1-Dichloroethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1			
1,2-Dichloroethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1			
1,1-Dichloroethene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1			
cis-1,2-Dichloroethene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	1.4*	<1			
trans-1,2-Dichloroethene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1				
1,2-Dichloropropane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1				
cis-1,3-Dichloropropene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1				
trans-1,3-Dichloropropene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1				
Ethylbenzene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1				
2-Hexanone	<50	<50	<50	<50	<50	<50	<12.5	<12.5	<12.5	<12.5	<12.5	<20	<20	<20	<20	<20		
Methylene Chloride	<10	<10	<10	<10	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5				
4-Methyl-2-pentanone (MIBK)	<50	<50	<50	<50	<50	<50	<12.5	<12.5	<12.5	<12.5	<12.5	<20	<20	<20	<20			
Styrene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1				
1,1,2,2-Tetrachloroethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1				
Tetrachloroethene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1				
Toluene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1				
1,1,1-Trichloroethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1				
1,1,2-Trichloroethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1				
Trichloroethylene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1				
Vinyl Chloride	<2	<2	<5.0	<5.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1				
Xylenes, Total	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1				
<b>PCBs (<math>\mu\text{g/L}</math>)</b>																		
Aroclor 1016	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aroclor 1221	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aroclor 1232	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aroclor 1242	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aroclor 1248	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aroclor 1254	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aroclor 1260	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

Notes:

Volatile organic compounds (VOC's) and polychlorinated biphenyls (PCBs) reported in micrograms per liter ( $\mu\text{g/L}$ )

PW = Public well

< = Not detected above the reporting limit provided

NA = Not analyzed

October 2002 and 2003 data validated to Level IV, no flags were required for the data in this table collected on those dates

October 2004, October 2005, and January 2006 data validated to Level II, no flags were required for the data in this table collected on those dates

\* The detection of cis-1,2-dichloroethene in PW-8 on 10-18-05 is considered a laboratory artifact from previous analyses

**Table 8**  
**Columbia City Municipal Water Supply Well Results - Metals and Inorganics**  
**Wayne Reclamation & Recycling**

### Notes:

Total metals and inorganic/wet chemistry parameters reported in milligrams per liter (mg/L)

PW = Public well

< = Not detected above the reporting limit provided

**Bold** = Analyte detected above the laboratory reporting limit

NA = Not analyzed

Octobre 2002

October 2002 data was validated to Level IV. (1) - Estimated.

October 2003 data validated to Level IV, no flags were present.

October 2004 and October 2005 data validated to Level II; no flags were required for the data in this table collection.

**Table 9**  
**Recovery Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled:	RECOVERY WELL RW-1 (Aboveground Storage Tank Area)										PRG (µg/L)
		8/27/1996	11/6/1996	6/11/1997	11/18/1997	4/21/1998	11/1/2001	10/25/2002	12/22/2003	10/22/2004	10/11/2005	
<b>VOCs (µg/L)</b>												
Acetone		NA	NA	NA	NA	ND	ND	<20.0	<20.0	< 20	3,650	
Benzene		ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	0.617	
Bromomethane		ND	ND	ND	ND	ND	ND	NA	<2.0	< 2	--	
2-Butanone (MEK)		NA	NA	NA	NA	NA	ND	<12.5	<20.0	< 20	--	
n-Butylbenzene		ND	NA	NA	NA	ND	ND	<1.0	<1.0	< 1	--	
Carbon Disulfide		NA	NA	NA	NA	ND	ND	<1.0	<20.0	< 20	768	
Chloroethane		ND	2.4	2.2	3.7	ND	ND	ND	<5.0	2.4	< 2	--
Chloroform		ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	0.274	
Dibromomethane		ND	NA	NA	NA	ND	ND	<1.0	<1.0	< 1	--	
1,1-Dichloroethane	170	180	110	190	140	103	11	73.7	100	26	973	
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	--	
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	0.0167	
cis-1,2-Dichloroethene	240	180	190	230	200	119	1,100	85	84.0	22	70	
trans-1,2-Dichloroethene	ND	1.4	1.4	2.9	ND	1.3	13	<1.0	<1.0	< 1	100	
1,2-Dichloroethene, Total	240	181.4	191.4	232.9	200	120.3	1,113	85	84	22	(170)	
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	1.25	
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	700	
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	ND	ND	ND	<12.5	<20.0	< 20	487	
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	1.43	
Toluene	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	1,000	
1,1,1-Trichloroethane	22	23	20	31	19	12.7	12.7	14.7	17.0	7.3	200	
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	0.314	
Trichloroethene	ND	ND	ND	ND	ND	2.4	240	9.2	4.3	13	2.54	
1,2,4-Trimethylbenzene	NA	NA	NA	NA	ND	ND	ND	<1.0	NA	< 5	--	
Vinyl Chloride	170	ND	100	140	80	54.8	60	40.2	38	9.1	0.0283	
Xylenes, Total	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	828	

**Notes:**

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).

-- = No PRG assigned.

< = Not detected above the reporting limit provided.

No data was collected during the October 1998 sampling event.

October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.

October 2003, 2004, and 2005 data validated to Level II; no flags were required for the data in this table collected on those dates.

ND = Not detected above the method detection limit.

NA = Not analyzed.

**Bold** = Analyte detected above laboratory reporting limit.

*Italics* = Reporting limit above the corresponding PRG.

Shaded = Analyte detected above the corresponding PRG.

**Table 9**  
**Recovery Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled:	RECOVERY WELL RW-2 (Aboveground Storage Tank Area)							PRG ( $\mu\text{g/L}$ )
		8/27/1996	11/6/1996	6/11/1997	11/18/1997	4/21/1998	11/1/2001	10/25/2002	
<b>VOCs (<math>\mu\text{g/L}</math>)</b>									
Acetone		NA	NA	NA	NA	ND	ND	ND	3,650
Benzene		ND	ND	ND	ND	ND	ND	ND	0.617
Bromomethane		ND	ND	ND	ND	ND	ND	ND	--
2-Butanone (MEK)		NA	NA	NA	NA	NA	NA	ND	--
n-Butylbenzene		ND	NA	NA	NA	ND	ND	ND	--
Carbon Disulfide		NA	NA	NA	NA	ND	ND	ND	768
Chloroethane		ND	<b>2.6</b>	<b>2.2</b>	ND	ND	ND	ND	--
Chloroform		ND	ND	ND	ND	ND	ND	ND	0.274
Dibromomethane		ND	NA	NA	NA	ND	ND	ND	--
1,1-Dichloroethane		<b>8.1</b>	<b>160</b>	<b>110</b>	<b>21</b>	<b>52</b>	<b>18.2</b>	<b>19</b>	973
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND	ND	--
1,1-Dichloroethene		ND	ND	ND	ND	ND	ND	ND	0.0167
cis-1,2-Dichloroethene		<b>6.6</b>	<b>150</b>	<b>180</b>	<b>53</b>	<b>78</b>	<b>45</b>	<b>55</b>	70
trans-1,2-Dichloroethene		ND	<b>1.6</b>	<b>1.4</b>	ND	ND	<b>1.7</b>	ND	100
1,2-Dichloroethene, Total		<b>6.6</b>	<b>151.6</b>	<b>181.4</b>	<b>53</b>	<b>78</b>	<b>46.7</b>	<b>55</b>	(170)
1,2-Dichloropropane		ND	ND	ND	ND	ND	ND	ND	1.25
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	700
4-Methyl-2-pentanone (MIBK)		NA	NA	NA	NA	ND	ND	ND	487
Tetrachloroethene		ND	ND	ND	ND	ND	ND	ND	1.43
Toluene		ND	ND	ND	ND	ND	ND	ND	1,000
1,1,1-Trichloroethane		ND	<b>23.0</b>	<b>20.0</b>	ND	<b>6.1</b>	<b>4.4</b>	ND	200
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	0.314
Trichloroethene		ND	ND	ND	ND	ND	<b>1.2</b>	ND	2.54
1,2,4-Trimethylbenzene		NA	NA	NA	NA	ND	ND	ND	--
Vinyl Chloride		<b>7.7</b>	<b>150</b>	<b>97</b>	<b>19</b>	<b>34</b>	<b>5.3</b>	<b>10</b>	0.0283
Xylenes, Total		ND	ND	ND	ND	ND	ND	ND	828

**Notes:**

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter ( $\mu\text{g/L}$ ).

ND = Not detected above the method detection limit.

NA = Not analyzed.

No data was collected during the October 1998 sampling event.

October 2002 data was validated to Level IV; no flags were required for the data in this table collected on that date.

**Bold** = Analyte detected above laboratory reporting limit.

**Shaded** = Analyte detected above the corresponding PRG.

-- = No PRG assigned.

**Table 9**  
**Recovery Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled:	RECOVERY WELL RW-3 (Aboveground Storage Tank Area)											PRG (µg/L)
		8/27/1996	11/6/1996	6/12/1997	11/18/1997	4/21/1998	8/18/1999	10/19/1999	11/1/2001	12/22/2003	10/22/2004	10/11/2005	
<b>VOCs (µg/L)</b>													
Acetone		NA	NA	NA	NA	ND	ND	ND	ND	<20.0	<20.0	< 20	3,650
Benzene		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	0.617
Bromomethane		ND	ND	ND	ND	ND	ND	ND	NA	<2.0	< 2	--	
2-Butanone (MEK)		NA	NA	NA	NA	NA	ND	NA	NA	<12.5	<20.0	< 20	--
n-Butylbenzene		ND	NA	NA	NA	ND	ND	ND	ND	<1.0	<1.0	< 1	--
Carbon Disulfide		NA	NA	NA	NA	ND	ND	ND	ND	<1.0	<20.0	< 20	768
Chloroethane		ND	NA	ND	ND	ND	ND	ND	ND	<5.0	<2.0	< 2	--
Chloroform		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	0.274
Dibromomethane		ND	NA	NA	NA	ND	ND	ND	ND	<1.0	<1.0	< 1	--
1,1-Dichloroethane		ND	3.1	2.7	4.9	ND	ND	ND	9.4	3.6	3.2	3.7	973
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	--
1,1-Dichloroethene		ND	ND	ND	1.9	ND	ND	ND	ND	<1.0	<1.0	< 1	0.0167
cis-1,2-Dichloroethene		390	330	270	690	340	150	200	340	183	170	260	70
trans-1,2-Dichloroethene		10	5.9	6.9	15	11	ND	5.1	8.6	7.1	5.0	6.4	100
1,2-Dichloroethene, Total		400	335.0	276.5	705	361	150	205	340	183	170	266.4	(170)
1,2-Dichloropropane		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	1.25
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	700
4-Methyl-2-pentanone (MIBK)		NA	NA	NA	NA	ND	ND	ND	ND	<12.5	<20.0	< 20	487
Tetrachloroethene		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	1.43
Toluene		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	1,000
1,1,1-Trichloroethane		ND	ND	ND	1.7	ND	ND	ND	4.4	4.9	5.3	10	200
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	0.314
Trichloroethene		150	130	120	240	330	96	140	99.1	106	92	88	2.54
1,2,4-Trimethylbenzene		NA	NA	NA	NA	ND	ND	ND	ND	<1.0	NA	< 5	--
Vinyl Chloride		43	40	28	50	3.5	11.0	15.0	30.4	30.7	9.7	12	0.0283
Xylenes, Total		ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	828

**Notes:**

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).

-- = No PRG assigned.

< = Not detected above the reporting limit provided.

No data was collected during the October 1998 sampling event.

October 2003, 2004, and 2005 data validated to Level II; no flags were required for the data in this table collected on those dates.

ND = Not detected above the method detection limit.

NA = Not analyzed.

**Bold** = Analyte detected above laboratory reporting limit.

*Italics* = Reporting limit above the corresponding PRG.

Shaded = Analyte detected above the corresponding PRG.

**Table 9**  
**Recovery Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled:	RECOVERY WELL RW-4 (Monitoring Wells MW-4S and MW-7S Area)										PRG ( $\mu\text{g/L}$ )
		8/27/1996	11/6/1996	6/12/1997	11/18/1997	4/21/1998	11/2/2001	4/23/2002	12/22/2003	10/22/2004	10/11/2005	
<b>VOCs (<math>\mu\text{g/L}</math>)</b>												
Acetone		NA	NA	NA	NA	ND	ND	ND	<20.0	<20.0	< 20	3,650
Benzene		ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	0.617	
Bromomethane		ND	ND	ND	ND	ND	ND	NA	<2.0	< 2	--	
2-Butanone (MEK)		NA	NA	NA	NA	NA	NA	<12.5	<20.0	< 20	--	
n-Butylbenzene		ND	NA	NA	NA	ND	ND	<1.0	<1.0	< 1	--	
Carbon Disulfide		NA	NA	NA	NA	ND	ND	<1.0	<20.0	< 20	768	
Chloroethane		ND	NA	ND	ND	ND	ND	<5.0	<2.0	< 2	--	
Chloroform		ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	0.274	
Dibromomethane		ND	NA	NA	NA	ND	ND	<1.0	<1.0	< 1	--	
1,1-Dichloroethane		ND	2.9	1.5	2.6	ND	13.3	1.2	1.5	2.7	1.7	973
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	--	
1,1-Dichloroethene		ND	ND	ND	ND	ND	2.3	ND	<1.0	<1.0	< 1	0.0167
cis-1,2-Dichloroethene		430	430	290	390	180	1,580	167	165	330	200	70
trans-1,2-Dichloroethene		27	26	18	24	12	23.2	16.4	13.8	25	16	100
1,2-Dichloroethene, Total								163.4				(170)
1,2-Dichloropropane		ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	1.25	
Ethylbenzene		ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	700	
4-Methyl-2-pentanone (MIBK)		NA	NA	NA	NA	ND	ND	<12.5	<20.0	< 20	487	
Tetrachloroethene		ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	1.43	
Toluene		ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	1,000	
1,1,1-Trichloroethane		ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	200	
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	0.314	
Trichloroethene		ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	2.54	
1,2,4-Trimethylbenzene		NA	NA	NA	NA	ND	ND	<1.0	NA	< 5	--	
Vinyl Chloride		ND	ND	ND	ND	ND	142	ND	<1.0	2.9	< 1	0.0283
Xylenes, Total		ND	ND	ND	ND	ND	ND	<1.0	<1.0	< 1	828	

**Notes:**

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter ( $\mu\text{g/L}$ ).

-- = No PRG assigned.

< = Not detected above the reporting limit provided.

No data was collected during the October 1998 sampling event.

October 2003, 2004, and 2005 data validated to Level II; no flags were required for the data in this table collected on those dates.

ND = Not detected above the method detection limit.

NA = Not analyzed.

**Bold** = Analyte detected above laboratory reporting limit.

*Italics* = Reporting limit above the corresponding PRG.

Shaded = Analyte detected above the corresponding PRG.

**Table 9**  
**Recovery Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled:	RECOVERY WELL RW-5 (Southeast of the Landfill)											PRG ( $\mu\text{g/L}$ )
		8/27/1996	11/6/1996	6/12/1997	11/18/1997	4/21/1998	11/2/2001	4/23/2002	10/25/2002	12/22/2003	10/22/2004	10/11/2005	
<b>VOCs (<math>\mu\text{g/L}</math>)</b>													
Acetone		NA	NA	NA	NA	ND	ND	ND	ND	<100	<20.0	< 100	3,650
Benzene		ND	ND	ND	ND	ND	ND	ND	ND	<5.0	3.6	< 5	0.617
Bromomethane		ND	ND	ND	ND	ND	ND	ND	ND	NA	<2.0	< 10	--
2-Butanone (MEK)		NA	NA	NA	NA	NA	NA	NA	NA	<62	<20.0	< 100	--
n-Butylbenzene		ND	NA	NA	NA	ND	ND	ND	ND	<5.0	<1.0	< 5	--
Carbon Disulfide		NA	NA	NA	NA	ND	ND	ND	ND	<5.0	<20.0	< 100	768
Chloroethane		ND	NA	ND	ND	ND	ND	ND	ND	<25	<2.0	< 10	--
Chloroform		ND	ND	ND	ND	ND	ND	ND	ND	<5.0	<1.0	< 5	0.274
Dibromomethane		ND	NA	NA	NA	ND	ND	ND	ND	<5.0	<1.0	< 5	--
1,1-Dichloroethane		ND	ND	1.1	4.0	ND	7.1	4.7	5.7	<5.0	4.7	< 5	973
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	<5.0	<1.0	< 5	--
1,1-Dichloroethene		ND	ND	ND	ND	ND	2.9	2.2	5.2	<5.0	1.8	< 5	0.0167
cis-1,2-Dichloroethene		330	330	910	1,900	4,000	2,310	2,520	2,500	2,310	3,600	2,200	70
trans-1,2-Dichloroethene		20	26	53	540	350	200	163	96	102	63	21	100
1,2-Dichloroethene, Total		340	356	913	2,040	4,200	2,310	2,520	2,500	2,312	3,663	2,221	(170)
1,2-Dichloropropane		ND	ND	ND	ND	ND	ND	ND	ND	<5.0	<1.0	< 5	1.25
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	<5.0	<1.0	< 5	700
4-Methyl-2-pentanone (MIBK)		NA	NA	NA	NA	ND	ND	ND	ND	<62	<20	< 100	487
Tetrachloroethene		ND	ND	ND	ND	ND	ND	ND	ND	<5.0	<1.0	< 5	1.43
Toluene		ND	ND	ND	ND	ND	ND	ND	ND	<5.0	<1.0	< 5	1,000
1,1,1-Trichloroethane		ND	ND	ND	ND	ND	4.0	3.1	ND	<5.0	1.2	< 5	200
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	<5.0	<1.0	< 5	0.314
Trichloroethene		ND	1.8	ND	15	130	348	219	55	173	50 (J)	17	2.54
1,2,4-Trimethylbenzene		NA	NA	NA	NA	ND	ND	ND	ND	<5.0	NA	< 25	--
Vinyl Chloride		100	200	520	1,600	1,100	393	436	600	336	520	360	0.0283
Xylenes, Total		ND	ND	ND	ND	ND	ND	ND	ND	<5.0	<1.0	< 5	828

**Notes:**

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter ( $\mu\text{g/L}$ ).

-- = No PRG assigned.

< = Not detected above the reporting limit provided.

October 2002 data validated to Level IV; no flags were required for the data in this table collected on that date.

October 2003 and October 2005 data validated to Level II; no flags were required for the data in this table collected on those dates.

October 2004 data validated to Level II; (J) = estimated.

No data was collected during the October 1998 sampling event.

ND = Not detected above the method detection limit.

NA = Not analyzed.

**Bold** = Analyte detected above laboratory reporting limit.

*Italics* = Reporting limit above the corresponding PRG.

Shaded = Analyte detected above the corresponding PRG.

**Table 9**  
**Recovery Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled:	RECOVERY WELL RW-6 (Southeast Area)						PRG ( $\mu\text{g/L}$ )
		8/27/1996	11/6/1996	6/12/1997	11/18/97	4/21/1998	11/2/2001	
<b>VOCs (<math>\mu\text{g/L}</math>)</b>								
Acetone		NA	NA	NA	NA	ND	ND	3,650
Benzene		ND	ND	ND	ND	ND	ND	0.617
Bromomethane		ND	ND	ND	ND	ND	ND	--
2-Butanone (MEK)		NA	NA	NA	NA	NA	NA	--
n-Butylbenzene		ND	NA	NA	NA	ND	ND	--
Carbon Disulfide		NA	NA	NA	NA	ND	ND	768
Chloroethane		ND	NA	7.5	ND	ND	ND	--
Chloroform		ND	ND	ND	ND	ND	ND	0.274
Dibromomethane		ND	NA	NA	NA	ND	ND	--
1,1-Dichloroethane		ND	ND	21	ND	ND	ND	973
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND	--
1,1-Dichloroethene		ND	ND	3.6	ND	ND	ND	0.0167
cis-1,2-Dichloroethene		ND	ND	4.00	1.0	5.7	43.1	70
trans-1,2-Dichloroethene		ND	ND	53	ND	ND	ND	100
1,2-Dichloroethene, Total		ND	ND	4.53	1.0	5.7	43.1	(170)
1,2-Dichloropropane		ND	ND	ND	ND	ND	ND	1.25
Ethylbenzene		ND	ND	ND	ND	ND	ND	700
4-Methyl-2-pentanone (MIBK)		NA	NA	NA	NA	ND	ND	487
Tetrachloroethene		ND	ND	ND	ND	ND	ND	1.43
Toluene		ND	ND	ND	ND	ND	ND	1,000
1,1,1-Trichloroethane		ND	ND	3.1	ND	ND	ND	200
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND	0.314
Trichloroethene		ND	ND	20	ND	ND	ND	2.54
1,2,4-Trimethylbenzene		NA	NA	NA	NA	ND	ND	--
Vinyl Chloride		ND	ND	780	ND	ND	ND	0.0283
Xylenes, Total		ND	ND	ND	ND	ND	ND	828

**Notes:**

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter ( $\mu\text{g/L}$ ).

ND = Not detected above the method detection limit.

NA = Not analyzed.

No data was collected during the October 1998 sampling event.

**Bold** = Analyte detected above laboratory reporting limit.

**Shaded** = Analyte detected above the corresponding PRG.

-- = No PRG assigned.

**Table 9**  
**Recovery Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled:	RECOVERY WELL RW-7 (Southeast Area)						PRG ( $\mu\text{g/L}$ )
		8/27/1996	11/6/1996	6/12/1997	11/18/1997	4/21/1998	11/2/2001	
<b>VOCs (<math>\mu\text{g/L}</math>)</b>								
Acetone		NA	NA	NA	NA	ND	ND	3,650
Benzene		ND	ND	ND	ND	ND	ND	0.617
Bromomethane		ND	ND	ND	ND	ND	ND	--
2-Butanone (MEK)		NA	NA	NA	NA	NA	NA	--
n-Butylbenzene		ND	NA	NA	NA	ND	ND	--
Carbon Disulfide		NA	NA	NA	NA	ND	ND	768
Chloroethane		ND	NA	ND	ND	ND	ND	--
Chloroform		ND	ND	ND	ND	ND	ND	0.274
Dibromomethane		ND	NA	NA	NA	ND	ND	--
1,1-Dichloroethane		ND	ND	ND	ND	ND	1.7	973
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND	--
1,1-Dichloroethene		ND	ND	ND	ND	ND	ND	0.0167
cis-1,2-Dichloroethene	2.4	200	100	50	ND	ND	ND	70
trans-1,2-Dichloroethene	ND	43	2.2	12	ND	ND	7.1	100
1,2-Dichloroethene, Total	2.4	953	102.2	532.0	ND	ND	660.1	(170)
1,2-Dichloropropane		ND	7.4	ND	2.4	ND	ND	1.25
Ethylbenzene		ND	ND	ND	ND	ND	ND	700
4-Methyl-2-pentanone (MIBK)		NA	NA	NA	NA	ND	ND	487
Tetrachloroethene		ND	1.0	ND	ND	ND	ND	1.43
Toluene		ND	ND	ND	ND	ND	ND	1,000
1,1,1-Trichloroethane		ND	ND	ND	ND	ND	ND	200
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND	0.314
Trichloroethene	1.7	200	36	140	43	ND	101	2.54
1,2,4-Trimethylbenzene	NA	NA	NA	NA	ND	ND	ND	--
Vinyl Chloride	ND	ND	ND	ND	79	33	174	0.0283
Xylenes, Total	ND	ND	ND	ND	ND	ND	ND	828

**Notes:**

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter ( $\mu\text{g/L}$ ).

ND = Not detected above the method detection limit.

NA = Not analyzed.

No data was collected during the October 1998 sampling event.

**Bold** = Analyte detected above laboratory reporting limit.

**Shaded** = Analyte detected above the corresponding PRG.

-- = No PRG assigned.

**Table 9**  
**Recovery Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled:	RECOVERY WELL RW-8 (Southeast Area)						PRG (µg/L)
		8/27/1996	11/6/1996	6/12/1997	11/18/1997	4/21/1998	11/2/2001	
<b>VOCs (µg/L)</b>								
Acetone		NA	NA	NA	NA	ND	ND	3,650
Benzene		ND	ND	ND	ND	ND	ND	0.617
Bromomethane		ND	ND	ND	ND	ND	ND	--
2-Butanone (MEK)		NA	NA	NA	NA	NA	NA	--
n-Butylbenzene		ND	NA	NA	NA	ND	ND	--
Carbon Disulfide		NA	NA	NA	NA	ND	ND	768
Chloroethane		ND	NA	3.6	2.1	ND	ND	--
Chloroform		ND	ND	ND	ND	ND	ND	0.274
Dibromomethane		ND	NA	NA	NA	ND	ND	--
1,1-Dichloroethane		ND	11	19	29	ND	110	973
1,2-Dichloroethane		ND	1,400	ND	ND	ND	ND	--
1,1-Dichloroethene		ND	3.1	3.0	ND	ND	30.6	0.0167
cis-1,2-Dichloroethene		3,000	1,434	3,000	ND	ND	13,500	70
trans-1,2-Dichloroethene		66	ND	42	44	ND	144	100
1,2-Dichloroethene, Total		3,066	1,434	2,842	4,744	3,500	18,644	(170)
1,2-Dichloropropane		ND	ND	ND	ND	ND	ND	1.25
Ethylbenzene		ND	ND	ND	ND	ND	ND	700
4-Methyl-2-pentanone (MIBK)		NA	NA	NA	NA	ND	ND	487
Tetrachloroethene		ND	ND	ND	ND	ND	ND	1.43
Toluene		ND	ND	ND	ND	ND	ND	1,000
1,1,1-Trichloroethane		ND	ND	ND	ND	ND	ND	200
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND	0.314
Trichloroethene		140	98	160	180	270	5,250	2.54
1,2,4-Trimethylbenzene		NA	NA	NA	NA	ND	ND	--
Vinyl Chloride		650	130	310	160	ND	802	0.0283
Xylenes, Total		ND	ND	ND	ND	ND	ND	828

**Notes:**

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter (µg/L).

ND = Not detected above the method detection limit.

NA = Not analyzed.

No data was collected during the October 1998 sampling event.

**Bold** = Analyte detected above laboratory reporting limit.

Shaded = Analyte detected above the corresponding PRG.

-- = No PRG assigned.

**Table 9**  
**Recovery Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled:	RECOVERY WELL RW-9 (Southeast Area)						PRG ( $\mu\text{g/L}$ )
		8/27/1996	11/6/1996	6/12/1997	11/18/1997	4/21/1998	11/2/2001	
<b>VOCs (<math>\mu\text{g/L}</math>)</b>								
Acetone		NA	NA	NA	NA	ND	ND	<b>3,650</b>
Benzene		ND	ND	ND	ND	ND	ND	<b>0.617</b>
Bromomethane		ND	ND	ND	ND	ND	ND	--
2-Butanone (MEK)		NA	NA	NA	NA	NA	NA	--
n-Butylbenzene		ND	NA	NA	NA	ND	ND	--
Carbon Disulfide		NA	NA	NA	NA	ND	ND	<b>768</b>
Chloroethane		ND	NA	<b>3.3</b>	ND	ND	ND	--
Chloroform		ND	ND	ND	ND	ND	ND	<b>0.274</b>
Dibromomethane		ND	NA	NA	NA	ND	ND	--
1,1-Dichloroethane		<b>1.3</b>	<b>3.3</b>	<b>1.2</b>	<b>1.9</b>	ND	<b>3.0</b>	<b>973</b>
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND	--
1,1-Dichloroethene		ND				ND		<b>0.0167</b>
cis-1,2-Dichloroethene								<b>70</b>
trans-1,2-Dichloroethene		<b>3</b>	<b>19</b>	<b>32</b>	<b>17</b>	<b>61</b>	<b>32.6</b>	<b>100</b>
1,2-Dichloroethene, Total		<b>343</b>	<b>2,119</b>	<b>2,732</b>	<b>3,017</b>	<b>5,361</b>	<b>3,912.6</b>	(170)
1,2-Dichloropropane		ND	ND	ND	ND	ND	<b>1.8</b>	<b>1.25</b>
Ethylbenzene		ND	ND	ND	ND	ND	ND	<b>700</b>
4-Methyl-2-pentanone (MIBK)		NA	NA	NA	NA	ND	ND	<b>487</b>
Tetrachloroethene		ND	ND	<b>3.1</b>	ND	ND	ND	<b>1.43</b>
Toluene		ND	ND	ND	ND	ND	ND	<b>1,000</b>
1,1,1-Trichloroethane		ND	ND	ND	ND	ND	ND	<b>200</b>
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND	<b>0.314</b>
Trichloroethene		<b>23</b>	<b>230</b>	<b>480</b>	<b>300</b>	<b>510</b>	<b>565</b>	<b>2.54</b>
1,2,4-Trimethylbenzene		NA	NA	NA	NA	ND	ND	--
Vinyl Chloride		<b>5.1</b>	<b>220</b>	<b>410</b>	<b>400</b>	ND	<b>306</b>	<b>0.0283</b>
Xylenes, Total		ND	ND	ND	ND	ND	ND	<b>828</b>

**Notes:**

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter ( $\mu\text{g/L}$ ).

ND = Not detected above the method detection limit.

NA = Not analyzed.

No data was collected during the October 1998 sampling event.

**Bold** = Analyte detected above laboratory reporting limit.

Shaded = Analyte detected above the corresponding PRG.

-- = No PRG assigned.

**Table 9**  
**Recovery Well Analytical Results**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled:	RECOVERY WELL RW-10 (Southeast Area)						PRG ( $\mu\text{g/L}$ )
		8/27/1996	11/6/1996	6/12/1997	11/18/1997	4/21/1998	11/2/2001	
<b>VOCs (<math>\mu\text{g/L}</math>)</b>								
Acetone		NA	NA	NA	NA	ND	ND	3,650
Benzene		ND	ND	ND	ND	ND	7	0.617
Bromomethane		2	ND	ND	ND	ND	ND	--
2-Butanone (MEK)		NA	NA	NA	NA	NA	NA	--
n-Butylbenzene		ND	NA	NA	NA	ND	ND	--
Carbon Disulfide		NA	NA	NA	NA	ND	ND	768
Chloroethane		10	NA	NA	17	ND	17	--
Chloroform		ND	ND	ND	ND	ND	ND	0.274
Dibromomethane		ND	NA	NA	NA	ND	ND	--
1,1-Dichloroethane		68	8	55	71	74	82	973
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND	--
1,1-Dichloroethene		5	ND	7	8	ND	7	0.0167
cis-1,2-Dichloroethene		6,100	1,400	8,600	25,000	11,000	11,000	70
trans-1,2-Dichloroethene		89	28	58	77	84	89	100
1,2-Dichloroethene, Total		6,189	1,128	8,658	48,077	11,084	11,089	(170)
1,2-Dichloropropane		ND	ND	ND	1	ND	2	1.25
Ethylbenzene		ND	ND	ND	ND	ND	ND	700
4-Methyl-2-pentanone (MIBK)		NA	NA	NA	NA	ND	ND	487
Tetrachloroethene		1	ND	1	ND	ND	ND	1.43
Toluene		ND	ND	ND	ND	ND	ND	1,000
1,1,1-Trichloroethane		ND	ND	ND	ND	ND	ND	200
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND	0.314
Trichloroethene		420	53	500	440	640	508	2.54
1,2,4-Trimethylbenzene		NA	NA	NA	NA	ND	ND	--
Vinyl Chloride		1,400	290	1,900	1,200	1,400	548	0.0283
Xylenes, Total		ND	ND	ND	ND	ND	ND	828

**Notes:**

Volatile organic compounds (VOCs) and Preliminary Remediation Goals (PRGs) reported in micrograms per liter ( $\mu\text{g/L}$ ).

ND = Not detected above the method detection limit.

NA = Not analyzed.

No data was collected during the October 1998 sampling event.

**Bold** = Analyte detected above laboratory reporting limit.

**Shaded** = Analyte detected above the corresponding PRG.

-- = No PRG assigned.

**Table 10**  
**Summary of Recovery Well Construction Details**  
**Wayne Reclamation & Recycling**

<b>Recovery Well Identification</b>	<b>TOIC Elevations 2001</b>	<b>Surface Elevations (msl)</b>	<b>Total Depth (bgs)</b>	<b>Well Diameter (inches)</b>	<b>Screen Length (feet)</b>	<b>Sump Length (feet)</b>	<b>Bottom Screen Elevation (msl)</b>	<b>Top Screen Elevation (msl)</b>	<b>Slot Size (inches)</b>	<b>General Location</b>	<b>Installation Date</b>
RW-1	818.45	819.52	32.00	6	20	5	792.52	812.52	0.02	AST Area	October-94
RW-2	824.29	825.07	40.00	6	20	5	790.07	810.07	0.02	AST Area	October-94
RW-3	822.71	823.36	32.00	6	20	5	796.36	816.36	0.02	AST Area	October-94
RW-4	833.24	833.53	48.30	6	20	5	790.23	810.23	0.02	RW-4 Area	October-94
RW-5	823.94	824.20	40.00	6	30	0	784.20	814.20	0.02	SE Area	October-94
RW-6	820.71	821.62	43.50	6	35	0	778.12	813.12	0.02	SE Area	October-94
RW-7	820.21	821.51	36.00	6	30	0	785.51	815.51	0.02	SE Area	October-94
RW-8	821.86	823.03	41.80	6	35	0	781.23	816.23	0.02	SE Area	October-94
RW-9	821.69	821.88	37.00	6	30	0	784.88	814.88	0.02	SE Area	October-94
RW-10	822.55	824.03	40.30	6	35	0	783.73	818.73	0.02	SE Area	October-94

**Notes:**

TOIC = Top of inner well casing.

msl = Above mean sea level.

bgs = Below ground surface.

Depth to groundwater measured in feet below TOIC.

TOIC and surface elevations based on Benchmark Surveying, Inc. surveys of 7/2/2001 and 10/25/2001.

Construction details from As-Built Remedial Design drawings (Warzyn, March 1995).

RW = Recovery well.

AST = Aboveground Storage Tank.

SE = Southeast.

**Table 11**  
**Summary of Groundwater Treatment System Volatile Organic Compound**  
**Influent and Effluent Sampling**  
**Wayne Reclamation & Recycling**

Date Sampled	7/15/2005		8/26/2005		9/29/2005	
CONSTITUENT	IN	EFF	IN	EFF	IN	EFF
<b>VOCs (µg/L)</b>						
1,1-Dichloroethane	<b>3.8</b>	< 1	<b>9.9</b>	< 1	<b>26</b>	< 1
1,2-Dichloroethane	< 1	< 1	< 1	< 1	< 1	< 1
1,1-Dichloroethene	< 1	< 1	<b>2.8</b>	< 1	<b>4.2</b>	< 1
cis-1,2-Dichloroethene	<b>580</b>	<b>14</b>	<b>1,200</b>	<b>19</b>	<b>2,000</b>	<b>140</b>
trans-1,2-Dichloroethene	<b>5.7</b>	< 1	<b>19</b>	< 1	<b>18</b>	< 1
Trichloroethene	<b>49</b>	< 1	<b>150</b>	< 1	<b>240</b>	<b>5</b>
Vinyl Chloride	<b>110</b>	< 1	<b>150</b>	< 1	<b>190</b>	< 1
<b>Total VOC Concentration</b>	<b>748.5</b>	<b>14.0</b>	<b>1,531.7</b>	<b>19.0</b>	<b>2,478.2</b>	<b>145.0</b>

Date Sampled	10/13/2005		11/3/2005		12/1/2005	
CONSTITUENT	IN	EFF	IN	EFF	IN	EFF
<b>VOCs (µg/L)</b>						
1,1-Dichloroethane	<b>23</b>	< 1	<b>23</b>	< 1	<b>29</b>	< 1
1,2-Dichloroethane	< 1	< 1	< 1	< 1	< 1	< 1
1,1-Dichloroethene	<b>2.8</b>	< 1	<b>2.9</b>	< 1	<b>4.1</b>	< 1
cis-1,2-Dichloroethene	<b>1,800</b>	<b>89</b>	<b>1,800</b>	<b>99</b>	<b>2,200</b>	<b>83</b>
trans-1,2-Dichloroethene	<b>17</b>	< 1	<b>18</b>	< 1	<b>24</b>	< 1
Trichloroethene	<b>210</b>	<b>5</b>	<b>230</b>	<b>4.2</b>	<b>320</b>	<b>4.3</b>
Vinyl Chloride	<b>170</b>	<b>1.3</b>	<b>220</b>	<b>1</b>	<b>270</b>	< 1
<b>Total VOC Concentration</b>	<b>2,222.8</b>	<b>95.3</b>	<b>2,293.9</b>	<b>104.2</b>	<b>2,847.1</b>	<b>87.3</b>

**Notes:**

Volatile organic compounds (VOCs) reported in micrograms per liter (µg/L).

IN = Influent water sample.

< = Not detected above the reporting limit provided.

EFF = Effluent water sample.

**Bold** = Analyte detected above the laboratory reporting limit.

Results indicated for primary detected constituents.

January through October 2005 data validated to Level II; no flags issued for data shown in this table.

**Table 12**  
**Summary of Groundwater Treatment System Effluent Sampling - Metals, Inorganics,**  
**and Polychlorinated Biphenyls**  
**Wayne Reclamation & Recycling**

CONSTITUENT	Date Sampled:	11/18/1997	12/18/1997	1/30/1998	10/13/1998	10/13/1999	10/6/2000	10/31/2001	10/24/2002	10/16/2003	10/21/2004	10/13/2005
<b>Total Metals (mg/L)</b>												
Arsenic		<b>0.015</b>	<b>0.0044</b>	<b>0.005</b>	<0.005	<0.005	<0.028	<0.0050	<0.0050	<b>0.0130</b>	<0.0100	<0.01
Beryllium		<0.0050	<0.0050	<0.0050	<0.003	<0.003	<0.003	<0.0010	<0.0010	<0.0010	<0.00400	<0.004
Cadmium		<0.0050	<0.0050	<0.0050	<0.005	<0.010	<0.005	<0.0010	<0.0010	<0.0010	<0.00500	<0.005
Chromium		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0020	<0.0020	<0.0020	<0.0100	<0.01
Copper		<b>0.032</b>	<0.020	<b>1.9</b>	<0.010	<0.005	<0.005	<0.0050	<0.0050	<b>0.0170</b>	<0.0200	<0.02
Lead		<0.10	<0.10	<0.10	<0.005	<0.005	<0.005	<0.0010	<0.0010	<0.0010	<0.0100	<0.01
Mercury		<0.00020	<0.00020	<0.00020	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002	<0.00200	<0.002
Molybdenum		<0.20	<0.20	<0.20	<0.020	<0.020	<0.020	<b>0.0061</b>	<b>0.0084</b>	<b>0.0064</b>	<0.0500	<0.05
Nickel		<0.050	<0.020	<0.020	<0.020	<0.020	<0.005	<b>0.0091</b>	<b>0.0078</b>	<b>0.0110</b>	<0.0500	<0.05
Potassium		<b>12.0</b>	<b>12.0</b>	<b>9.5</b>	<b>11.0</b>	<b>9.0</b>	<b>9.0</b>	<b>8.6</b>	<b>10.7</b>	<b>10.8</b>	<b>10.4</b>	<b>9.14</b>
Selenium		<0.0020	<0.0020	<0.0020	<0.005	<0.005	<0.036	<0.0050	<0.0050	<0.0050	<0.0100	<0.01
Silver		<0.010	<0.010	<0.010	<0.020	<0.001	<0.005	<0.0005	<0.0005	<0.0005	<0.0500	<0.05
Zinc		<b>0.054</b>	<0.020	<0.020	<0.020	<0.020	<0.020	<0.050	<0.050	<b>0.226</b>	<0.0500	<0.05
<b>Inorganics/Wet Chemistry (mg/L)</b>												
Ammonia Nitrogen		<b>0.72</b>	<b>0.15</b>	<b>0.28</b>	<b>1.00</b>	<b>0.80</b>	<b>1.10</b>	<b>1.20</b>	<b>1.8</b>	<b>2.6</b>	<b>1.45</b>	<b>1.17</b>
Biological Oxygen Demand		<2.0	<2.0	<2.0	<5	<b>6</b>	<b>8</b>	<5	<b>9.4</b>	<5	<5	<b>12</b>
Chemical Oxygen Demand		<b>23</b>	<b>18</b>	<b>21</b>	<10	<10	<b>16</b>	<b>72</b>	<b>24</b>	<b>17</b>	<10.0	<b>26.9</b>
Nitrate/Nitrite Nitrogen		<b>0.32</b>	<b>0.33</b>	<b>0.44</b>	<b>0.036</b>	<b>0.04</b>	<b>0.033</b>	<b>0.23</b>	<b>0.033</b>	<b>0.20</b>	<0.500	<0.5
Oil & Grease		<5.0	<5.0	<5.0	<5.0	<b>6</b>	<b>6</b>	<5	<5	<5	<5.00	<5
pH		<b>8.3</b>	<b>8.27</b>	<b>7.65</b>	NA	<b>7.2</b>	<b>7.2</b>	NA	<b>8.06</b>	<b>7.87</b>	<b>8.14</b>	<b>8.14</b>
Surfactants (MBAs)		Negative	Negative	Negative	<b>Positive</b>	<b>Positive</b>	Negative	<b>0.13</b>	<b>0.16</b>	<0.10	<b>0.701</b>	<0.2
Total Cyanide		<0.005	<0.005	<0.0050	<0.005	<0.005	<0.020	<0.005	<0.005	<0.005 (J)	<0.00500	<0.005
Total Kjeldahl Nitrogen		<b>47</b>	<b>1.21</b>	<b>0.98</b>	<b>1.6</b>	<b>1.09</b>	<b>1.5</b>	<b>1.6</b>	<b>2.1</b>	<b>2.7</b>	<b>2.08</b>	<2
Total Phenols		<0.01	<0.01	<b>0.17</b>	<0.010	<0.010	<0.005	0.0093	0.0084	<0.010	<0.100	<0.05
Total Phosphorus		<b>0.93</b>	<b>0.75</b>	<b>0.96</b>	<0.05	<b>0.48</b>	<0.15	<0.15	<0.15	<0.05	<0.0500	<0.05
Total Solids		<b>1,100</b>	<b>820</b>	<b>850</b>	<b>830</b>	<b>790</b>	<b>820</b>	<b>850</b>	<b>800</b>	<b>960</b>	<b>940</b>	<b>734</b>
Total Suspended Solids		<b>11</b>	<b>14</b>	<b>19</b>	<b>27</b>	<5	<b>5</b>	<b>9</b>	<5	<b>6</b>	<b>34.5</b>	<5
<b>PCBs (µg/L)</b>												
Aroclor 1016		<0.2	<0.2	<0.2	<1.0	<0.7	<1.0	<0.21	<0.21	<0.20	<0.51	<0.5
Aroclor 1221		<0.2	<0.2	<0.2	<1.0	<0.7	<1.0	<0.21	<0.21	<0.20	<0.51	<0.5
Aroclor 1232		<0.4	<0.4	<0.4	<1.0	<0.7	<1.0	<0.21	<0.21	<0.20	<0.51	<0.5
Aroclor 1242		<0.2	<0.2	<0.2	<1.0	<0.7	<1.0	<0.21	<0.21	<0.20	<0.51	<0.5
Aroclor 1248		<0.2	<0.2	<0.2	<1.0	<0.7	<1.0	<0.21	<0.21	<0.20	<0.51	<0.5
Aroclor 1254		<0.2	<0.2	<0.2	<1.0	<0.7	<1.0	<0.21	<0.21	<0.20	<0.51	<0.5
Aroclor 1260		<0.2	<0.2	<0.2	<1.0	<0.7	<1.0	<0.21	<0.21	<0.20	<0.51	<0.5

**Notes:**

Total metals and inorganic/wet chemistry parameters reported in milligrams per liter (mg/L).

Polychlorinated biphenyls (PCBs) are reported in micrograms per liter (µg/L).

**Bold** = Analyte detected above laboratory reporting limit.

< = Not detected above the reporting limit provided.

NA = Not analyzed.

October 2002 data was validated to Level JV; no flags were required for the data in this table collected on that date.

October 2003 data was validated to Level II; (J) = estimated.

October 2004 and October 2005 data was validated to Level II; no flags were required for the data in this table collected on those dates.

**Table 13**  
**Summary of Treatment System Air Sampling**  
**Wayne Reclamation & Recycling**

Date Sampled	4/23/1999		5/17/1999		6/24/1999	
CONSTITUENT (ppb[v/v])	IN	EFF	IN	EFF	IN	EFF
1,1-Dichloroethane	<b>26</b>	<b>25</b>	<b>29</b>	<b>13</b>	<b>45</b>	<b>9</b>
1,1-Dichloroethene	<14	<13	<18	<12	<17	6
cis-1,2-Dichloroethene	<b>1,600</b>	<b>1,500</b>	<b>2,200</b>	<b>1,000</b>	<b>2,300</b>	<b>390</b>
trans-1,2-Dichloroethene	<b>50</b>	<b>58</b>	<b>52</b>	<b>36</b>	<b>140</b>	<b>35</b>
Tetrachloroethene	<14	<b>17</b>	<b>110</b>	<b>52</b>	<b>46</b>	<b>6</b>
Toluene	<b>20</b>	<13	<18	<12	<17	3
1,1,1-Trichloroethane	<b>36</b>	<b>36</b>	<b>83</b>	<b>25</b>	<b>43</b>	<b>8</b>
Trichloroethene	<b>220</b>	<b>300</b>	<b>570</b>	<b>240</b>	<b>860</b>	<b>120</b>
Vinyl Chloride	<b>360</b>	<b>280</b>	<b>220</b>	<b>120</b>	<b>240</b>	<b>35</b>
<b>Cumulative Risk<sup>(1)</sup></b>	<b>7.52E-07</b>	<b>5.93E-07</b>	<b>4.98E-07</b>	<b>2.67E-07</b>	<b>5.45E-07</b>	<b>7.90E-08</b>

Date Sampled	7/13/1999	8/6/1999	9/1/1999	10/14/1999	11/23/1999	12/13/1999
CONSTITUENT (ppb[v/v])	EFFLUENT SAMPLE					
1,1-Dichloroethane	<b>45</b>	<b>45</b>	<b>60</b>	<b>61</b>	<b>32</b>	<b>32</b>
1,1-Dichloroethene	<7.8	<9.2	4	<9.2	<14	<12
cis-1,2-Dichloroethene	<b>2,200</b>	<9.2	<b>1,600</b>	<b>3,300</b>	<b>1,400</b>	<b>1,500</b>
trans-1,2-Dichloroethene	<b>100</b>	<b>140</b>	<b>120</b>	<b>260</b>	<b>76</b>	<b>95</b>
Tetrachloroethene	<b>51</b>	<b>27</b>	<b>25</b>	<b>63</b>	<b>16</b>	<b>38</b>
Toluene	<7.8	<9.2	<2.3	<9.2	<14	<12
1,1,1-Trichloroethane	<b>180</b>	<b>44</b>	<b>200</b>	<b>99</b>	<b>97</b>	<b>66</b>
Trichloroethene	<b>440</b>	<b>810</b>	<b>390</b>	<b>1,700</b>	<b>390</b>	<b>520</b>
Vinyl Chloride	<b>340</b>	<b>270</b>	<b>220</b>	<b>180</b>	<b>200</b>	<b>200</b>
<b>Cumulative Risk<sup>(1)</sup></b>	<b>7.29E-07</b>	<b>6.01E-07</b>	<b>4.76E-07</b>	<b>4.68E-07</b>	<b>4.33E-07</b>	<b>4.44E-07</b>

**Notes:**

<sup>(1)</sup> Cumulative Risk calculation is indicated on Table 14.

Results are reported in parts per billion on a volume per volume basis (ppb[v/v]) for primary detected constituents, analyzed via United States Environmental Protection Agency Method TO-14.

IN = Influent; EFF = effluent sample; < = not detected above the reporting limit provided.

Bold = Analyte detected above the laboratory reporting limit.

Air treatment system was discontinued on June 24, 1999. Air is now discharged directly to the atmosphere.

**Table 13**  
**Summary of Treatment System Air Sampling**  
**Wayne Reclamation & Recycling**

Date Sampled	1/3/2000	2/7/2000	3/15/2000	4/25/2000	5/24/2000	6/6/2000
CONSTITUENT (ppb[v/v])	EFFLUENT SAMPLE					
1,1-Dichloroethane	29	17	25	31	30	27
1,1-Dichloroethene	<18	<8.3	<9.0	<3.1	<12	2
cis-1,2-Dichloroethene	<b>1,100</b>	<b>740</b>	<b>1,200</b>	<b>2,300</b>	<b>1,000</b>	<b>1,800</b>
trans-1,2-Dichloroethene	68	55	46	83	71	85
Tetrachloroethene	57	<8.3	88	<21	110	30
Toluene	<18	<8.3	<9.0	<3.1	<12	<2.0
1,1,1-Trichloroethane	<b>110</b>	<b>29</b>	<b>89</b>	<b>47</b>	<b>150</b>	<b>110</b>
Trichloroethene	<b>440</b>	<b>220</b>	<b>400</b>	<b>300</b>	<b>440</b>	<b>380</b>
Vinyl Chloride	94	91	61	260	130	190
<b>Cumulative Risk<sup>(1)</sup></b>	<b>2.25E-07</b>	<b>2.00E-07</b>	<b>1.60E-07</b>	<b>5.52E-07</b>	<b>3.07E-07</b>	<b>4.14E-07</b>

Date Sampled	7/25/2000	8/4/2000	9/5/2000	10/6/2000	11/7/2000	12/21/2000
CONSTITUENT (ppb[v/v])	EFFLUENT SAMPLE					
1,1-Dichloroethane	21	30	34	49	36	30
1,1-Dichloroethene	<9.7	<12	<12	<18	<10	<9.3
cis-1,2-Dichloroethene	<b>1,400</b>	<b>2,200</b>	<b>2,100</b>	<b>2,200</b>	<b>1,900</b>	<b>1,900</b>
trans-1,2-Dichloroethene	39	100	140	160	97	100
Tetrachloroethene	31	56	22	52	110	38
Toluene	<9.7	<12	<12	<18	<10	<9.3
1,1,1-Trichloroethane	<b>80</b>	<b>59</b>	<b>80</b>	<b>93</b>	<b>73</b>	<b>50</b>
Trichloroethene	<b>290</b>	<b>840</b>	<b>540</b>	<b>920</b>	<b>840</b>	<b>760</b>
Vinyl Chloride	190	230	210	130	170	190
<b>Cumulative Risk<sup>(1)</sup></b>	<b>4.10E-07</b>	<b>5.25E-07</b>	<b>4.63E-07</b>	<b>3.23E-07</b>	<b>4.10E-07</b>	<b>4.36E-07</b>

**Notes:**

<sup>(1)</sup> Cumulative Risk calculation is indicated on Table 14.

Results are reported in parts per billion on a volume per volume basis (ppb[v/v]) for primary detected constituents, analyzed via United States Environmental Protection Agency Method TO-14.

< = Not detected above the reporting limit provided.

Bold = Analyte detected above the laboratory reporting limit.

Air treatment system was discontinued on June 24, 1999. Air is now discharged directly to the atmosphere.

**Table 13**  
**Summary of Treatment System Air Sampling**  
**Wayne Reclamation & Recycling**

Date Sampled	1/30/2001	2/26/2001	3/21/2001	4/23/2001	5/21/2001	6/13/2001
<b>CONSTITUENT (ppb[v/v])</b>	<b>EFFLUENT SAMPLE</b>					
1,1-Dichloroethane	30	<140	18	<140	<150	<150
1,1-Dichloroethene	<9.2	<140	2.1	<140	<150	<150
cis-1,2-Dichloroethene	2,000	1,700	1,300	1,000	630	1,400
trans-1,2-Dichloroethene	49	NA	NA	NA	NA	NA
Tetrachloroethene	38	<140	34	<140	<150	<150
Toluene	<9.2	<140	4.0	<140	<150	<150
1,1,1-Trichloroethane	53	<140	26	<140	<150	<150
Trichloroethene	630	260	340	160	<150	430
Vinyl Chloride	270	180	190	160	<150	210
<b>Cumulative Risk<sup>(1)</sup></b>	<b>5.93E-07</b>	<b>4.05E-07</b>	<b>4.13E-07</b>	<b>3.58E-07</b>	<b>3.39E-07</b>	<b>4.77E-07</b>

Date Sampled	7/23/2001	8/23/2001	9/17/2001	10/31/2001	11/18/2001	12/28/2001
<b>CONSTITUENT (ppb[v/v])</b>	<b>EFFLUENT SAMPLE</b>					
1,1-Dichloroethane	<140	<140	<140	<140	<100	<130
1,1-Dichloroethene	<140	<140	<140	<140	<100	<130
cis-1,2-Dichloroethene	1,100	600	680	1,500	2,200	1,700
trans-1,2-Dichloroethene	NA	NA	NA	<140	<100	NA
Tetrachloroethene	<140	<140	<140	<140	<100	<130
Toluene	<140	<140	<140	<140	<100	<130
1,1,1-Trichloroethane	<140	<140	<140	<140	<100	<130
Trichloroethene	140	280	280	410	460	300
Vinyl Chloride	<140	<140	<140	260	210	210
<b>Cumulative Risk<sup>(1)</sup></b>	<b>3.16E-07</b>	<b>3.24E-07</b>	<b>3.24E-07</b>	<b>5.77E-07</b>	<b>4.71E-07</b>	<b>4.67E-07</b>

**Notes:**

<sup>(1)</sup> Cumulative Risk calculation is indicated on Table 14.

Results are reported in parts per billion on a volume per volume basis (ppb[v/v]) for primary detected constituents, analyzed via United States Environmental Protection Agency Method TO-14.

< = Not detected above the reporting limit provided; NA = not analyzed.

Bold = Analyte detected above the laboratory reporting limit.

Air treatment system was discontinued on June 24, 1999. Air is now discharged directly to the atmosphere.

**Table 13**  
**Summary of Treatment System Air Sampling**  
**Wayne Reclamation & Recycling**

Date Sampled	1/18/2002	2/7/2002	3/21/2002	4/23/2002	5/23/2002	6/18/2002
CONSTITUENT (ppb[v/v])	EFFLUENT SAMPLE					
1,1-Dichloroethane	<130	<130	<140	3.5	<140	<140
1,1-Dichloroethene	<130	<130	<140	<0.69	<140	<140
cis-1,2-Dichloroethene	<b>1,600</b>	<b>2,800</b>	<b>900</b>	<b>37</b>	<b>800</b>	<b>1,200</b>
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA
Tetrachloroethene	<130	<130	<140	<b>7.8</b>	<140	<140
Toluene	<130	<130	<140	<0.69	<140	<140
1,1,1-Trichloroethane	<130	<130	<140	<b>42</b>	<140	<140
Trichloroethene	<b>280</b>	<b>530</b>	<b>180</b>	<b>29</b>	<b>160</b>	<b>290</b>
Vinyl Chloride	<b>280</b>	<b>500</b>	<b>160</b>	<b>1.0</b>	<b>150</b>	<b>220</b>
<b>Cumulative Risk<sup>(1)</sup></b>	<b>6.09E-07</b>	<b>1.07E-06</b>	<b>3.59E-07</b>	<b>4.79E-09</b>	<b>3.38E-07</b>	<b>4.88E-07</b>

Date Sampled	7/19/2002	8/14/2002	9/20/2002	10/24/2002	11/21/2002	12/13/2002
CONSTITUENT (ppb[v/v])	EFFLUENT SAMPLE					
1,1-Dichloroethane	<140	<140	<100	<130	<140	<140
1,1-Dichloroethene	<140	<140	<100	<130	<140	<140
cis-1,2-Dichloroethene	<b>230</b>	<b>920</b>	<b>1,500</b>	<b>1,500</b>	<b>1,200</b>	<b>1,100</b>
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA
Tetrachloroethene	<140	<140	<100	<130	<140	<140
Toluene	<140	<140	<100	<130	<140	<140
1,1,1-Trichloroethane	<140	<140	<100	<130	<140	<140
Trichloroethene	<140	<b>200</b>	<b>520</b>	<b>1,000</b>	<b>720</b>	<b>410</b>
Vinyl Chloride	<140	<b>220</b>	<100	<130	<140	<140
<b>Cumulative Risk<sup>(1)</sup></b>	<b>3.16E-07</b>	<b>4.84E-07</b>	<b>2.48E-07</b>	<b>3.47E-07</b>	<b>3.47E-07</b>	<b>3.31E-07</b>

**Notes:**

<sup>(1)</sup> Cumulative Risk calculation is indicated on Table 14.

Results are reported in parts per billion on a volume per volume basis (ppb[v/v]) for primary detected constituents, analyzed via United States Environmental Protection Agency Method TO-14.

< = Not detected above the reporting limit provided; NA = not analyzed.

Bold = Analyte detected above the laboratory reporting limit.

Air treatment system was discontinued on June 24, 1999. Air is now discharged directly to the atmosphere.

July through December 2002 data validated to Level IV; no flags required for data in this table collected on those dates.

**Table 13**  
**Summary of Treatment System Air Sampling**  
**Wayne Reclamation & Recycling**

Date Sampled	1/23/2003	2/10/2003	3/19/2003	4/15/2003	5/19/2003	6/6/2003
CONSTITUENT (ppb[v/v])	EFFLUENT SAMPLE					
1,1-Dichloroethane	<140	<140	<130	<140	<130	<140
1,1-Dichloroethene	<140	<140	<130	<140	<130	<140
cis-1,2-Dichloroethene	920	520	760	1,400	750	1,000
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA
Tetrachloroethene	<140	<140	<130	<140	<130	<140
Toluene	<140	<140	<130	<140	<130	<140
1,1,1-Trichloroethane	<140	<140	<130	<140	<130	<140
Trichloroethene	420	320	320	380	280	390
Vinyl Chloride	<140	<140	<130	<140	<130	<140
<b>Cumulative Risk<sup>(1)</sup></b>	<b>3.31E-07</b>	<b>3.26E-07</b>	<b>3.04E-07</b>	<b>3.29E-07</b>	<b>3.02E-07</b>	<b>3.29E-07</b>

Date Sampled	7/14/2003	8/21/2003	9/15/2003	10/16/2003	11/7/2003	12/22/2003
CONSTITUENT (ppb[v/v])	EFFLUENT SAMPLE					
1,1-Dichloroethane	<140	<140	2.3	<130	<130	<130
1,1-Dichloroethene	<140	<140	<0.66	<130	<130	<130
cis-1,2-Dichloroethene	740	800	270	750	380	1,100
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA
Tetrachloroethene	<140	<140	7.4	<130	<130	<130
Toluene	<140	<140	<0.66	<130	<130	<130
1,1,1-Trichloroethane	<140	<140	5.4	<130	<130	<130
Trichloroethene	290	330	240	230	230	220
Vinyl Chloride	<140	<140	11	<130	<130	190
<b>Cumulative Risk<sup>(1)</sup></b>	<b>3.24E-07</b>	<b>3.26E-07</b>	<b>3.63E-08</b>	<b>2.99E-07</b>	<b>2.99E-07</b>	<b>4.22E-07</b>

**Notes:**

<sup>(1)</sup> Cumulative Risk calculation is indicated on Table 14.

Results are reported in parts per billion on a volume per volume basis (ppb[v/v]) for primary detected constituents, analyzed via United States Environmental Protection Agency Method TO-14.

< = Not detected above the reporting limit provided; NA = not analyzed.

Bold = Analyte detected above the laboratory reporting limit.

Air treatment system was discontinued on June 24, 1999. Air is now discharged directly to the atmosphere.

2003 data validated to Level II; no flags required for data in this table collected in 2003.

**Table 13**  
**Summary of Treatment System Air Sampling**  
**Wayne Reclamation & Recycling**

Date Sampled	1/29/2004	2/20/2004	3/16/2004	4/19/2004	5/18/2004	6/23/2004
<b>CONSTITUENT (ppb[v/v])</b>	<b>EFFLUENT SAMPLE</b>					
1,1-Dichloroethane	<130	<120	<140	18	<150	23
1,1-Dichloroethene	<130	<120	<140	3.1	<150	5.0
cis-1,2-Dichloroethene	<b>350</b>	<b>1,200</b>	<b>540</b>	<b>2,300</b>	<b>510</b>	<b>1,800</b>
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA
Tetrachloroethene	<130	<120	<140	7.1	<150	12
Toluene	<130	<120	<140	2.1	<150	5.8
1,1,1-Trichloroethane	<130	<120	<140	4.8	<150	4.3
Trichloroethene	<130	<b>300</b>	<140	<b>480</b>	<150	<b>260</b>
Vinyl Chloride	<b>150</b>	<b>220</b>	<140	<b>350</b>	<150	<b>300</b>
<b>Cumulative Risk<sup>(1)</sup></b>	<b>3.35E-07</b>	<b>4.86E-07</b>	<b>3.16E-07</b>	<b>7.44E-07</b>	<b>3.39E-07</b>	<b>6.31E-07</b>

Date Sampled	7/30/2004	8/31/2004	9/22/2004	10/19/2004	11/22/2004	12/17/2004
<b>CONSTITUENT (ppb[v/v])</b>	<b>EFFLUENT SAMPLE</b>					
1,1-Dichloroethane	<140	<130	<140	<150	<140	<140
1,1-Dichloroethene	<140	<130	<140	<150	<140	<140
cis-1,2-Dichloroethene	<b>1,300</b>	<b>1,000</b>	<b>620</b>	<b>820 (UB)</b>	<b>1,000</b>	<b>1,300</b>
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA
Tetrachloroethene	<140	<130	<140	<150	<140	<140
Toluene	<140	<130	<140	<150	<140	<140
1,1,1-Trichloroethane	<140	<130	<140	<150	<140	<140
Trichloroethene	<b>250</b>	<b>180</b>	<140	<b>180</b>	<b>210</b>	<b>780</b>
Vinyl Chloride	<b>260</b>	<b>140</b>	<140	<b>180 (UB)</b>	<b>170</b>	<140
<b>Cumulative Risk<sup>(1)</sup></b>	<b>5.68E-07</b>	<b>3.17E-07</b>	<b>3.16E-07</b>	<b>4.02E-07</b>	<b>3.82E-07</b>	<b>3.50E-07</b>

**Notes:**

<sup>(1)</sup> Cumulative Risk calculation is indicated on Table 14.

Results are reported in parts per billion on a volume per volume basis (ppb[v/v]) for primary detected constituents, analyzed via United States Environmental Protection Agency Method TO-14.

< = Not detected above the reporting limit provided; NA = not analyzed.

Bold = Analyte detected above the laboratory reporting limit.

Air treatment system was discontinued on June 24, 1999. Air is now discharged directly to the atmosphere.

2004 data validated to Level II; (UB) = estimated value due to blank contamination.

**Table 13**  
**Summary of Treatment System Air Sampling**  
**Wayne Reclamation & Recycling**

Date Sampled	1/26/2005	2/18/2005	3/16/2005	4/19/2005	5/13/2005	6/03/2005
CONSTITUENT (ppb[v/v])	EFFLUENT SAMPLE					
1,1-Dichloroethane	<140	<140	<140	<b>53.2</b>	<b>15.9</b>	22
1,1-Dichloroethene	<140	<140	<140	<13.2	<b>3.4</b>	3
cis-1,2-Dichloroethene	<b>700</b>	<b>750</b>	<b>620</b>	<b>4,330</b>	<0.71	<b>1,970</b>
trans-1,2-Dichloroethene	NA	NA	<140	<14.1	NA	<113
Tetrachloroethene	<140	<140	<140	<b>46.8</b>	<b>15.1</b>	<b>21.6</b>
Toluene	<140	<140	<140	<13.2	<0.71	<b>1.5</b>
1,1,1-Trichloroethane	<140	<140	<140	<b>15.6</b>	<0.64	<b>18.2</b>
Trichloroethene	<140	<140	<140	<b>718</b>	<b>34.7</b>	<b>522</b>
Vinyl Chloride	<140	<140	<b>180</b>	<13.8	<0.74	<b>274</b>
<b>Cumulative Risk <sup>(1)</sup></b>	<b>3.16E-07</b>	<b>3.16E-07</b>	<b>3.98E-07</b>	<b>7.34E-08</b>	<b>5.69E-09</b>	<b>5.93E-07</b>

Date Sampled	7/15/2005	8/26/2005	9/29/2005	10/17/2005	11/03/2005	12/01/2005
CONSTITUENT (ppb[v/v])	EFFLUENT SAMPLE					
1,1-Dichloroethane	< 140	< 140	<b>56.2</b>	< 140	< 0.69	<b>22.5</b>
1,1-Dichloroethene	< 140	< 140	< 13.8	< 140	< 0.69	< 14.8
cis-1,2-Dichloroethene	<b>920</b>	<b>2,400</b>	<b>7,160 J</b>	<b>1,300</b>	< 0.69	NA
trans-1,2-Dichloroethene	< 140	< 140	<b>185</b>	< 140	< 0.69	<b>19.4</b>
Tetrachloroethene	< 140	< 140	< 13.8	< 140	< 0.69	< 14.8
Toluene	< 140	< 140	< 13.8	< 140	< 0.69	< 14.8
1,1,1-Trichloroethane	< 140	< 140	<b>16.4</b>	< 140	< 0.69	< 14.8
Trichloroethene	<b>250</b>	<b>710</b>	< 13.8	<b>300</b>	< 0.69	<b>224</b>
Vinyl Chloride	< 140	<b>530</b>	< 13.8	< 140	< 0.69	<b>344</b>
<b>Cumulative Risk <sup>(1)</sup></b>	<b>3.22E-07</b>	<b>1.15E-06</b>	<b>3.12E-08</b>	<b>3.25E-07</b>	<b>1.56E-09</b>	<b>7.20E-07</b>

**Notes:**

<sup>(1)</sup> Cumulative Risk calculation is indicated on Table 14.

Results are reported in parts per billion on a volume per volume basis (ppb[v/v]) for primary detected constituents, analyzed via United States Environmental Protection Agency Method TO-14.

< = Not detected above the reporting limit provided; NA = not analyzed.

Bold = Analyte detected above the laboratory reporting limit.

Air treatment system was discontinued on June 24, 1999. Air is now discharged directly to the atmosphere.

2005 data validated to Level II; no flags required for data in this table.

**Table 14**  
**Summary of Air Dispersion Calculations**  
**Wayne Reclamation & Recycling**

Description / Sample Date	Input / Output	CONSTITUENTS								Cumulative Cancer Risk
		Tetrachloromethane	Trichloromethane	1,1-Dichloromethane	1,1,1-Trichloromethane	Vinyl Chloride	1,1-Dichloromethane	Toluene	Carcinogen	
		Carcinogen	Non-Carcinogen	Carcinogen	Non-Carcinogen	Carcinogen	Non-Carcinogen	Carcinogen	Non-Carcinogen	
IN 6/24/1999	(ppb(v/v)) ( $\mu\text{g}/\text{s}$ )	46 0.0003	860 0.0048	17 0.0001	2300 0.0129	140 0.0003	240 0.0013	43 0.0002	45 0.0003	17 0.0001
Max.Conc.	0.001	0.023	0.000	0.060	0.004	0.006	0.001	0.001	0.000	5.45E-07
ECR	7.14E-09	4.52E-08	6	390	35	8	9	3		
EFF (ppb(v/v)) ( $\mu\text{g}/\text{s}$ )	6 0.0000	120 0.0007	0.0000	0.0022 0.0002	0.0002 0.0001	0.0000 0.0001	0.0000 0.0001	0.0000 0.0000	0.0000 0.0000	0.0000
Max.Conc.	0.000	0.003	0.000	0.010	0.001	0.000	0.000	0.000	0.000	0.000
ECR	9.31E-10	6.31E-09	8	2200	100	340	180	45	8	7.90E-08
EFF (ppb(v/v)) ( $\mu\text{g}/\text{s}$ )	51 0.0003	440 0.0025	2200 0.0000	0.0123 0.0003	0.0005 0.0019	0.0015 0.0010	0.002 0.0010	0.0003 0.0003	0.0000 0.0001	0.0000
Max.Conc.	0.001	0.012	0.000	0.058	0.003	0.009	0.005	0.001	0.000	0.000
ECR	7.91E-09	2.31E-08	9	140	270	44	45	9		7.29E-07
EFF (ppb(v/v)) ( $\mu\text{g}/\text{s}$ )	27 0.0002	810 0.0045	45 0.0003	0.0001 0.0008	0.0015 0.0019	0.002 0.0010	0.002 0.0010	0.0003 0.0003	0.0001 0.0001	0.0000
Max.Conc.	0.001	0.021	0.001	0.000	0.004	0.007	0.001	0.001	0.000	0.000
ECR	4.19E-09	4.26E-08	4	1600	120	220	200	60	2	6.01E-07
EFF (ppb(v/v)) ( $\mu\text{g}/\text{s}$ )	25 0.0001	390 0.0022	4 0.0000	0.0000 0.0000	0.0007 0.0007	0.0012 0.0011	0.0011 0.0011	0.0003 0.0003	0.0000 0.0000	0.0000
Max.Conc.	0.001	0.010	0.000	0.042	0.003	0.006	0.005	0.005	0.000	0.000
ECR	3.88E-09	2.05E-08	9	3300	260	180	99	61	9	4.76E-07
EFF (ppb(v/v)) ( $\mu\text{g}/\text{s}$ )	63 0.0004	1700 0.0095	9 0.0001	0.0185 0.0015	0.0010 0.0010	0.006 0.006	0.006 0.006	0.0003 0.0003	0.0001 0.0001	0.0000
Max.Conc.	0.002	0.045	0.000	0.087	0.007	0.005	0.003	0.002	0.000	0.000
ECR	9.78E-09	8.94E-08	9	3300	260	180	99	61	9	4.76E-07
EFF (ppb(v/v)) ( $\mu\text{g}/\text{s}$ )	16 0.0001	390 0.0022	14 0.0001	1400 0.0078	16 0.0004	200 0.0011	97 0.0005	32 0.0002	14 0.0001	4.33E-07
Max.Conc.	0.000	0.010	0.000	0.037	0.002	0.005	0.003	0.001	0.000	0.000
ECR	2.48E-09	2.05E-08	14	1400	16	200	97	32	14	4.33E-07
EFF (ppb(v/v)) ( $\mu\text{g}/\text{s}$ )	38 0.0002	520 0.0029	14 0.0001	1500 0.0034	95 0.0005	200 0.0011	66 0.0004	32 0.0002	14 0.0001	4.44E-07
Max.Conc.	0.001	0.014	0.000	0.039	0.002	0.005	0.002	0.001	0.000	0.000
ECR	5.90E-09	2.74E-08	14	1500	95	200	66	32	14	4.44E-07
EFF (ppb(v/v)) ( $\mu\text{g}/\text{s}$ )	57 0.0003	440 0.0025	18 0.0001	1100 0.0062	68 0.0004	110 0.0005	94 0.0006	55 0.0002	18 0.0001	4.44E-07
Max.Conc.	0.000	0.012	0.000	0.029	0.002	0.002	0.001	0.001	0.000	0.000
ECR	8.84E-09	2.31E-08	18	1100	68	94	110	55	18	4.44E-07
EFF (ppb(v/v)) ( $\mu\text{g}/\text{s}$ )	8 0.0000	220 0.0012	8 0.0000	740 0.0041	55 0.0005	91 0.0002	29 0.0002	17 0.0001	8 0.0000	2.25E-07
Max.Conc.	0.000	0.006	0.000	0.019	0.001	0.002	0.001	0.000	0.000	2.25E-07
ECR	1.29E-09	1.16E-08	8	740 0.0041	55 0.0005	91 0.0002	29 0.0002	17 0.0001	8 0.0000	2.25E-07

Notes:  
Detected constituent concentrations in parts per billion on a volume per volume basis ( $\text{ppb}(v/v)$ ) from Table 13.

$\mu\text{g}/\text{s} = \text{ppb}(v/v) \times 1,000 / (22,500 \times 2,025 \times 3,000)$ .  
ECR = Excess Cancer Risk = Maximum concentration (in  $\mu\text{g}/\text{m}^3$ )  $\times$  Unit Risk Factor.  
IN = Sample collected from air treatment system influent.

EFF = Sample collected from air treatment system effluent.

Max. Conc. = Maximum predicted concentration in micrograms per meter cubed ( $\mu\text{g}/\text{m}^3$ ) from 1SC-LT2 model run output.  
Unit Risk Factors are:

1,1-Dichloroethane -- 1.63E-08  
Trichloromethane -- 2.00E-06  
Tetrachloromethane -- 5.90E-06

**Table 14**  
**Summary of Air Dispersion Calculations**  
**Wayne Reclamation & Recycling**

Description / Sample Date	Input / Output	Tetrachloroethene	Trichloroethene	1,1-Dichloroethene	1,1,1-Trichloroethene	trans-1,2-Dichloroethene	Vinyl Chloride	1,1,1-Trichloroethane	1,1-Dichloroethane	Toluene	Cumulative Cancer Risk
		Carcinogen	Carcinogen	Non-Carcinogen	Non-Carcinogen	Non-Carcinogen	Carcinogen	Non-Carcinogen	Carcinogen	Non-Carcinogen	
3/15/2000	EFF (ppb(v/v)) 88 (g/s) 0.0005	400	9	1200	46	61	89	25	9	0.0001	
	Max.Conc. 0.002	0.0022	0.0001	0.0067	0.0003	0.0003	0.0005	0.0001	0.0001	0.0001	
	ECR 1.37E-08	0.011	0.000	0.032	0.001	0.002	0.002	0.001	0.001	0.000	1.60E-07
4/25/2000	EFF (ppb(v/v)) 21 (g/s) 0.0001	2,10E-08	300	3	2300	83	260	47	31	3	
	Max.Conc. 0.001	0.0017	0.0000	0.0129	0.0005	0.0015	0.0003	0.0002	0.0000	0.0000	
	ECR 3.26E-09	0.008	0.000	0.060	0.002	0.007	0.001	0.001	0.000	0.000	5.52E-07
5/24/2000	EFF (ppb(v/v)) 110 (g/s) 0.0006	1,58E-08	440	12	1000	71	130	150	30	12	
	Max.Conc. 0.003	0.0025	0.0001	0.0056	0.0004	0.0007	0.0008	0.0002	0.0001	0.0001	
	ECR 1.71E-08	0.012	0.000	0.026	0.002	0.003	0.004	0.001	0.000	0.000	
6/6/2000	EFF (ppb(v/v)) 30 (g/s) 0.0002	2,31E-08	380	2	1800	85	190	110	27	2	
	Max.Conc. 0.001	0.0021	0.0000	0.0101	0.0005	0.0011	0.0006	0.0002	0.0000	0.0000	
	ECR 4.66E-09	0.009	0.000	0.047	0.002	0.005	0.003	0.001	0.000	0.000	
7/25/2000	EFF (ppb(v/v)) 31 (g/s) 0.0002	2,00E-08	290	10	1400	39	190	80	21	10	
	Max.Conc. 0.001	0.0016	0.0001	0.0078	0.0002	0.0011	0.0004	0.0001	0.0001	0.0001	
	ECR 4.81E-09	1.53E-08	0.000	0.037	0.001	0.005	0.002	0.001	0.000	0.000	
8/4/2000	EFF (ppb(v/v)) 56 (g/s) 0.0003	8.69E-09	840	12	2200	100	230	59	30	12	
	Max.Conc. 0.001	0.0047	0.0001	0.0123	0.0006	0.0013	0.0003	0.0002	0.0001	0.0001	
	ECR 5.22E-09	4.42E-08	0.000	0.058	0.003	0.006	0.002	0.001	0.000	0.000	
9/5/2000	EFF (ppb(v/v)) 0.0001 (g/s) 0.0001	540	12	2100	140	210	80	34	12		
	Max.Conc. 0.001	0.0030	0.0001	0.0118	0.0008	0.0012	0.0004	0.0002	0.0001	0.0001	
	ECR 3.41E-09	2.84E-08	0.000	0.055	0.004	0.006	0.002	0.001	0.000	0.000	
10/6/2000	EFF (ppb(v/v)) 52 (g/s) 0.0003	920	18	2200	160	130	93	49	18		
	Max.Conc. 0.001	0.0052	0.0001	0.0123	0.0009	0.0007	0.0005	0.0003	0.0001	0.0001	
	ECR 8.07E-09	4.84E-08	0.000	0.058	0.004	0.003	0.002	0.001	0.000	0.000	
	EFF (ppb(v/v)) 110 (g/s) 0.0006	940	10	1900	97	170	73	36	10		
	Max.Conc. 0.003	0.0047	0.0001	0.0106	0.0005	0.0010	0.0004	0.0002	0.0001	0.0001	
	ECR 1.71E-08	4.42E-08	0.000	0.050	0.003	0.004	0.002	0.001	0.000	0.000	
11/7/2000	EFF (ppb(v/v)) 38 (g/s) 0.0002	760	9	1900	100	190	50	30	9		
	Max.Conc. 0.001	0.0043	0.0001	0.0106	0.0006	0.0011	0.0003	0.0002	0.0001	0.0001	
	ECR 5.90E-09	4.00E-08	0.000	0.050	0.003	0.005	0.001	0.001	0.000	0.000	
					3.90E-07		1.29E-11				4.30E-07

**Notes:**  
 Detected constituent concentrations in parts per billion on a volume per volume basis (ppb(v/v)) from Table 13.

$\text{g/s} = \text{ppb(v/v)} \times 1,000 = (22,500 \times 2,205 \times 1,600)$ .  
 ECR = Excess Cancer Risk = Maximum concentration (in  $\mu\text{g/m}^3$ )  $\times$  Unit Risk Factor.  
 IN = Sample collected from air treatment system influent.

EFF = Sample collected from air treatment system effluent.

Max. Conc. = Maximum predicted concentration in micrograms per meter cubed ( $\mu\text{g/m}^3$ ) from ISC-LT2 model run output.  
 Unit Risk Factors are:  
 1,1-Dichloroethane -- 7.80E-05  
 1,1,1-Trichloroethene -- 1.63E-08  
 Trichloroethene -- 2.00E-06  
 Tetrachloroethene -- 5.90E-06

**Table 14**  
**Summary of Air Dispersion Calculations**  
**Wayne Reclamation & Recycling**

CONSTITUENTS											Cumulative Cancer Risk
Description / Sample Date	Input / Output	Tetrachloroethene	Trichloroethene	1,1-Dichloroethene	1,1,1-Trichloroethene	1,1,1,2-Tetrachloroethene	Vinyl Chloride	1,1,1,2,2-Pentaethene	1,1-Dichloroethane	Toluene	
		Carcinogen	Carcinogen	Non-Carcinogen	Non-Carcinogen	Non-Carcinogen	Carcinogen	Non-Carcinogen	Carcinogen	Non-Carcinogen	
EFF	(ppbv/v)	38	630	9	2000	49	270	53	30	9	
1/30/2001	(g/s)	0.0002	0.0035	0.0001	0.0112	0.0003	0.0015	0.0003	0.0002	0.0001	
	Max. Conc.	0.001	0.017	0.000	0.053	0.001	0.007	0.001	0.001	0.000	
ECR		5.90E-09	3.31E-08			5.34E-07		1.29E-11			5.93E-07
EFF	(ppbv/v)	140	260	140	1700	1	180	140	140	140	
2/26/2001	(g/s)	0.0008	0.0015	0.0008	0.0095	0.0000	0.0010	0.0008	0.0008	0.0008	
	Max. Conc.	0.004	0.007	0.004	0.045	0.000	0.005	0.004	0.004	0.004	
ECR		2.17E-08	1.37E-08			3.69E-07		6.00E-11			4.05E-07
EFF	(ppbv/v)	34	340	2	1300	1	190	26	18	4	
3/21/2001	(g/s)	0.0002	0.0019	0.0000	0.0073	0.0000	0.0011	0.0001	0.0001	0.0000	
	Max. Conc.	0.001	0.009	0.000	0.034	0.000	0.005	0.001	0.000	0.000	
ECR		5.28E-09	1.79E-08			3.90E-07		7.72E-12			4.13E-07
EFF	(ppbv/v)	140	160	140	1000	1	160	140	140	140	
4/23/2001	(g/s)	0.0008	0.0009	0.0008	0.0056	0.0000	0.0009	0.0008	0.0008	0.0008	
	Max. Conc.	0.004	0.004	0.004	0.026	0.000	0.004	0.004	0.004	0.004	
ECR		2.17E-08	8.42E-09			3.28E-07		6.00E-11			3.58E-07
EFF	(ppbv/v)	150	150	150	630	1	150	150	150	150	
5/21/2001	(g/s)	0.0008	0.0008	0.0008	0.0035	0.0000	0.0008	0.0008	0.0008	0.0008	
	Max. Conc.	0.004	0.004	0.004	0.017	0.000	0.004	0.004	0.004	0.004	
ECR		2.33E-08	7.89E-09			3.08E-07		6.43E-11			3.39E-07
EFF	(ppbv/v)	150	430	150	1400	1	210	150	150	150	
6/13/2001	(g/s)	0.0008	0.0024	0.0008	0.0078	0.0000	0.0012	0.0008	0.0008	0.0008	
	Max. Conc.	0.004	0.011	0.004	0.037	0.000	0.006	0.004	0.004	0.004	
ECR		2.33E-08	2.26E-08			4.31E-07		6.43E-11			4.77E-07
EFF	(ppbv/v)	140	140	140	1100	1	140	140	140	140	
7/23/2001	(g/s)	0.0008	0.0008	0.0008	0.0062	0.0000	0.0008	0.0008	0.0008	0.0008	
	Max. Conc.	0.004	0.004	0.004	0.029	0.000	0.004	0.004	0.004	0.004	
ECR		2.17E-08	7.36E-09			2.87E-07		6.00E-11			3.16E-07
EFF	(ppbv/v)	140	280	140	600	1	140	140	140	140	
8/23/2001	(g/s)	0.0008	0.0016	0.0008	0.0034	0.0000	0.0008	0.0008	0.0008	0.0008	
	Max. Conc.	0.004	0.007	0.004	0.016	0.000	0.004	0.004	0.004	0.004	
ECR		2.17E-08	1.47E-08			2.87E-07		6.00E-11			3.24E-07
EFF	(ppbv/v)	140	280	140	680	1	140	140	140	140	
9/17/2001	(g/s)	0.0008	0.0016	0.0008	0.0038	0.0000	0.0008	0.0008	0.0008	0.0008	
	Max. Conc.	0.004	0.007	0.004	0.018	0.000	0.004	0.004	0.004	0.004	
ECR		2.17E-08	1.47E-08			2.87E-07		6.00E-11			3.24E-07
EFF	(ppbv/v)	140	410	140	1500	140	260	140	140	140	
10/31/2001	(g/s)	0.0008	0.0023	0.0008	0.0084	0.0008	0.0015	0.0008	0.0008	0.0008	
	Max. Conc.	0.004	0.011	0.004	0.039	0.004	0.007	0.004	0.004	0.004	
ECR		2.17E-08	2.16E-08			5.33E-07		6.00E-11			5.77E-07

Notes:

Detected constituent concentrations in parts per billion on a volume per volume basis (ppbv/v) from Table 13.

g/s = ppbv/v \* 1,000 / (22,500 \* 2.05 \* 3,600).

ECR = Excess Cancer Risk = Maximum concentration (in  $\mu\text{g/m}^3$ ) \* Unit Risk Factor.

IN = Sample collected from air treatment system influent.

EFF = Sample collected from air treatment system effluent.

Max. Conc. = Maximum predicted concentration in micrograms per meter cubed ( $\mu\text{g/m}^3$ ) from ISC-LT2 model run output

Unit Risk Factors are:

Vinyl Chloride --

1,1-Dichloroethane --

2,00E-06

Tetrachloroethene --

5.90E-06

**Table 14**  
**Summary of Air Dispersion Calculations**  
**Wayne Reclamation & Recycling**

Description / Sample Date	Input / Output	CONSTITUENTS										Cumulative Cancer Risk	
		Tetrachloroethene	Trichloroethene	1,1-Dichloroethene	trans-1,2-Dichloroethene	1,1,1-Trichloroethane	1,1,1-Dichloroethane	Toluene	Carcinogen	Non-Carcinogen	1,1,1-Trichloroethane	1,1,1-Dichloroethane	Non-Carcinogen
11/18/2001	EFF (ppbv/v)	100	460	100	2200	100	210	100	100	100	0.0006	0.0006	0.0006
	Max. Conc. (g/s)	0.0006	0.0026	0.0006	0.0123	0.0006	0.0012	0.0006	0.0006	0.0006	0.0003	0.0003	0.0003
	ECR	1.55E-08	2.42E-08			0.003	0.0058	0.003	0.0006	0.0006	4.31E-07	4.29E-11	4.71E-07
12/28/2001	EFF (ppbv/v)	130	300	130	1700	1	210	130	130	130	0.0007	0.0007	0.0007
	Max. Conc.	0.003	0.008	0.003	0.045	0.000	0.000	0.006	0.003	0.003	0.003	0.003	0.003
	ECR	2.02E-08	1.58E-08			0.000	0.000	4.31E-07	5.57E-11	5.57E-11	4.67E-07		
1/18/2002	EFF (ppbv/v)	130	280	130	1600	1	280	130	130	130	0.0007	0.0007	0.0007
	Max. Conc. (g/s)	0.0007	0.0016	0.0007	0.0090	0.000	0.0016	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007
	ECR	2.02E-08	1.47E-08			0.000	0.000	5.74E-07	5.57E-11	5.57E-11	6.09E-07		
2/7/2002	EFF (ppbv/v)	130	530	130	2800	1	500	130	130	130	0.0007	0.0007	0.0007
	Max. Conc.	0.003	0.014	0.003	0.074	0.000	0.013	0.003	0.003	0.003	0.003	0.003	0.003
	ECR	2.02E-08	2.79E-08			1.03E-06	1.03E-06	5.37E-11	5.37E-11	5.37E-11	1.07E-06		
3/21/2002	EFF (ppbv/v)	140	180	140	900	1	160	140	140	140	0.0008	0.0008	0.0008
	Max. Conc. (g/s)	0.0008	0.0010	0.0008	0.0050	0.000	0.0009	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008
	ECR	2.17E-08	9.47E-09			0.000	0.000	0.004	0.004	0.004	0.004	0.004	0.004
4/23/2002	EFF (ppbv/v)	8	29	1	37	1	42	4	4	4	0.000	0.000	0.000
	Max. Conc. (g/s)	0.0000	0.0002	0.0000	0.0002	0.000	0.000	0.0002	0.0000	0.0000	0.000	0.000	0.000
	ECR	1.21E-09	1.53E-09			2.05E-09	2.05E-09	1.50E-12	1.50E-11	1.50E-11	3.59E-07		
5/23/2002	EFF (ppbv/v)	140	160	140	800	1	150	140	140	140	0.0008	0.0008	0.0008
	Max. Conc. (g/s)	0.0008	0.0009	0.0008	0.0045	0.000	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008
	ECR	2.17E-08	8.42E-09			0.000	0.000	0.004	0.004	0.004	0.004	0.004	0.004
6/18/2002	EFF (ppbv/v)	140	290	140	1200	1	220	140	140	140	0.0008	0.0008	0.0008
	Max. Conc. (g/s)	0.0008	0.0016	0.0008	0.0067	0.000	0.0012	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008
	ECR	2.17E-08	1.53E-08			0.000	0.000	4.51E-07	6.00E-11	6.00E-11	3.39E-07		
7/19/2002	EFF (ppbv/v)	140	140	140	230	1	140	140	140	140	0.0008	0.0008	0.0008
	Max. Conc. (g/s)	0.0008	0.0008	0.0008	0.0013	0.000	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008
	ECR	2.17E-08	7.36E-09			0.000	0.000	0.004	0.004	0.004	0.004	0.004	0.004
8/14/2002	EFF (ppbv/v)	140	200	140	920	1	220	140	140	140	0.0008	0.0008	0.0008
	Max. Conc. (g/s)	0.0008	0.0011	0.0008	0.0052	0.000	0.0012	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008
	ECR	2.17E-08	1.05E-08			0.000	0.000	0.004	0.004	0.004	0.004	0.004	0.004

Notes:  
Detected constituent concentrations in parts per billion on a volume per volume basis (ppbv/v) from Table 13.

g/s = ppbv/v x 1.000 (22,500 x 2.205 x 3.600).  
ECR = Excess Cancer Risk = Maximum concentration (in  $\mu\text{g/m}^3$ ) x Unit Risk Factor.  
IN = Sample collected from air treatment system influent.

EFF = Sample collected from air treatment system effluent.

**Table 14**  
**Summary of Air Dispersion Calculations**  
**Wayne Reclamation & Recycling**

Description	Constituents										Cumulative Cancer Risk
	Input / Output	Tetrahalomethane	Trichloromethane	1,1-Dichloromethane	cis-1,2-Dichloromethane	trans-1,2-Dichloromethane	Vinyl Chloride	1,1,1-Trichloroethane	1,1-Dichloroethane	Toluene	
/ Sample Date	Carcinogen	Carcinogen	Non-Carcinogen	Non-Carcinogen	Non-Carcinogen	Non-Carcinogen	Carcinogen	Non-Carcinogen	Non-Carcinogen	Non-Carcinogen	Cancer Risk
EFF 9/20/2002	(ppb(v/v)) (g/s)	100 0.0006	520 0.0029	100 0.0006	1500 0.0084	1 0.0000	100 0.0006	100 0.0006	100 0.0006	100 0.0006	0.0006
Max.Conc. ECR	0.003 1.55E-08	0.014 2.74E-08	0.003 0.039	0.003 0.039	0.0000 0.0000	0.0003 0.0003	0.0006 0.0006	0.0003 0.0003	0.0003 0.0003	0.0003 0.0003	0.0003
EFF 10/24/2002	(ppb(v/v)) (g/s)	140 0.0008	720 0.0040	140 0.0008	1300 0.0073	1 0.0000	140 0.0008	140 0.0008	140 0.0008	140 0.0008	0.0008
Max.Conc. ECR	0.004 2.17E-08	0.019 3.79E-08	0.004 0.034	0.019 0.034	0.0000 0.0000	0.0004 0.0004	0.0000 0.0004	0.0004 0.0004	0.0004 0.0004	0.0004 0.0004	0.0004
EFF 11/21/2002	(ppb(v/v)) (g/s)	140 0.0008	720 0.0040	140 0.0008	1200 0.0067	1 0.0000	140 0.0008	140 0.0008	140 0.0008	140 0.0008	0.0008
Max.Conc. ECR	0.004 2.17E-08	0.019 3.79E-08	0.004 0.032	0.004 0.032	0.0000 0.0000	0.0004 0.0004	0.0000 0.0004	0.0004 0.0004	0.0004 0.0004	0.0004 0.0004	0.0004
EFF 12/13/2002	(ppb(v/v)) (g/s)	140 0.0008	410 0.0023	140 0.0008	1100 0.0062	1 0.0000	140 0.0008	140 0.0008	140 0.0008	140 0.0008	0.0008
Max.Conc. ECR	0.004 2.17E-08	0.011 2.16E-08	0.004 0.024	0.011 0.024	0.029 0.029	0.0000 0.0000	0.0004 0.0004	0.0004 0.0004	0.0004 0.0004	0.0004 0.0004	0.0004
EFF 1/2/2003	(ppb(v/v)) (g/s)	140 0.0008	420 0.0024	140 0.0008	920 0.0052	1 0.0000	140 0.0008	140 0.0008	140 0.0008	140 0.0008	0.0008
Max.Conc. ECR	0.004 2.17E-08	0.011 2.21E-08	0.004 0.024	0.004 0.024	0.0000 0.0000	0.0004 0.0004	0.0000 0.0004	0.0004 0.0004	0.0004 0.0004	0.0004 0.0004	0.0004
EFF 2/10/2003	(ppb(v/v)) (g/s)	140 0.0008	320 0.0018	140 0.0008	520 0.0029	1 0.0000	140 0.0008	140 0.0008	140 0.0008	140 0.0008	0.0008
Max.Conc. ECR	0.004 2.17E-08	0.008 1.68E-08	0.004 0.014	0.008 0.014	0.0000 0.0000	0.0004 0.0004	0.0000 0.0004	0.0004 0.0004	0.0004 0.0004	0.0004 0.0004	0.0004
EFF 3/19/2003	(ppb(v/v)) (g/s)	130 0.0007	320 0.0018	130 0.0007	760 0.0043	1 0.0000	130 0.0007	130 0.0007	130 0.0007	130 0.0007	0.0007
Max.Conc. ECR	0.003 2.02E-08	0.008 1.68E-08	0.003 0.014	0.008 0.014	0.0000 0.0000	0.0003 0.0003	0.0000 0.0003	0.0003 0.0003	0.0003 0.0003	0.0003 0.0003	0.0003
EFF 4/15/2003	(ppb(v/v)) (g/s)	140 0.0008	380 0.0021	140 0.0008	1400 0.0078	1 0.0000	140 0.0008	140 0.0008	140 0.0008	140 0.0008	0.0008
Max.Conc. ECR	0.004 2.02E-08	0.010 1.67E-08	0.004 0.037	0.004 0.037	0.0000 0.0000	0.0004 0.0004	0.0000 0.0004	0.0004 0.0004	0.0004 0.0004	0.0004 0.0004	0.0004
EFF 5/19/2003	(ppb(v/v)) (g/s)	130 0.0007	280 0.0016	130 0.0007	750 0.0042	1 0.0000	130 0.0007	130 0.0007	130 0.0007	130 0.0007	0.0007
Max.Conc. ECR	0.003 2.02E-08	0.007 1.47E-08	0.003 0.020	0.007 0.020	0.0000 0.0000	0.0003 0.0003	0.0000 0.0003	0.0003 0.0003	0.0003 0.0003	0.0003 0.0003	0.0003
EFF 6/6/2003	(ppb(v/v)) (g/s)	140 0.0008	390 0.0022	140 0.0008	1000 0.0056	1 0.0000	140 0.0008	140 0.0008	140 0.0008	140 0.0008	0.0008
Max.Conc. ECR	0.004 2.17E-08	0.010 2.05E-08	0.004 0.026	0.004 0.026	0.0000 0.0000	0.0004 0.0004	0.0000 0.0004	0.0004 0.0004	0.0004 0.0004	0.0004 0.0004	0.0004

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detected continuous concentrations in parts per billion on a volume per volume basis ( $\text{ppqv}^{-1}$ ) from Table 15. The  $\text{ppqv}^{-1}$  value is  $(22.500 \times 2.205) / (3.600)$ . Unit Risk Factors are: Vinyl Chloride = 7.80E-003.

**EFF** = Sample collected from air treatment system effluent  
**IN** = Sample collected from air treatment system influent  
**ER/R** = Excess (ancer Risk / Maximum concentration (in ))

Under contract with TxDT, Wayne RR (in-2018-07) OHK K. Reports Semi-Annual Progress Report(SAPP) July–Dec 2018. Figures/Graphs/Tables 14 (air disp calc, Fig 4-10c, etc.) in Table 14.

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**Table 14**  
**Summary of Air Dispersion Calculations**  
**Wayne Reclamation & Recycling**

Description / Sample Date	Input / Output	CONSTITUENTS										Cumulative Cancer Risk
		Tetrachloroethene	Carcinogen	Trichloroethene	Carcinogen	1,1-Dichloroethene	Non-Carcinogen	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl Chloride	Non-Carcinogen	
7/14/2003	EFF (ppb(v/v)) (g/s)	140	290	140	740	1	140	140	140	140	140	
	Max.Conc.	0.004	0.008	0.008	0.0041	0.000	0.0008	0.0008	0.0008	0.0008	0.0008	
	ECR	2.17E-08	1.53E-08	0.004	0.019	0.000	0.004	0.004	0.004	0.004	0.004	3.24E-07
8/21/2003	EFF (ppb(v/v)) (g/s)	140	330	140	800	1	140	140	140	140	140	
	Max.Conc.	0.004	0.008	0.0018	0.0008	0.0045	0.0000	0.0008	0.0008	0.0008	0.0008	
	ECR	2.17E-08	1.74E-08	0.004	0.021	0.000	0.004	0.004	0.004	0.004	0.004	3.26E-07
EFF	(ppb(v/v))	7.4	240	66	210	1	11	5.4	2.3	0.66		
9/15/2003	(ppb(v/v)) (g/s)	0.0000	0.0013	0.0000	0.0015	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	
	Max.Conc.	0.000	0.005	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	
	ECR	1.15E-09	1.26E-08			2.26E-08		9.86E-13		3.63E-08		
EFF	(ppb(v/v))	130	230	130	750	1	130	130	130	130	130	
10/16/2003	(ppb(v/v)) (g/s)	0.0007	0.0013	0.0007	0.0042	0.0000	0.0007	0.0007	0.0007	0.0007	0.0007	
	Max.Conc.	0.003	0.006	0.003	0.020	0.000	0.003	0.003	0.003	0.003	0.003	
	ECR	2.02E-08	1.21E-08			2.67E-07		5.57E-11		2.99E-07		
EFF	(ppb(v/v))	130	230	130	380	1	130	130	130	130	130	
11/7/2003	(ppb(v/v)) (g/s)	0.0007	0.0013	0.0007	0.0021	0.0000	0.0007	0.0007	0.0007	0.0007	0.0007	
	Max.Conc.	0.003	0.006	0.003	0.010	0.000	0.003	0.003	0.003	0.003	0.003	
	ECR	2.02E-08	1.16E-08			2.67E-07		5.57E-11		2.99E-07		
EFF	(ppb(v/v))	130	220	130	1100	1	190	130	130	130	130	
12/2/2003	(ppb(v/v)) (g/s)	0.0007	0.0012	0.0007	0.0062	0.0000	0.0011	0.0007	0.0007	0.0007	0.0007	
	Max.Conc.	0.003	0.006	0.003	0.029	0.000	0.005	0.003	0.003	0.003	0.003	
	ECR	2.02E-08	1.16E-08			3.90E-07		5.57E-11		4.22E-07		
EFF	(ppb(v/v))	130	220	130	350	1	150	130	130	130	130	
1/29/2004	(ppb(v/v)) (g/s)	0.0007	0.0007	0.0007	0.0020	0.0000	0.0008	0.0007	0.0007	0.0007	0.0007	
	Max.Conc.	0.003	0.003	0.003	0.009	0.000	0.004	0.003	0.003	0.003	0.003	
	ECR	2.02E-08	6.84E-09			3.08E-07		5.57E-11		3.35E-07		
EFF	(ppb(v/v))	120	300	120	1200	1	220	120	120	120	120	
2/20/2004	(ppb(v/v)) (g/s)	0.0007	0.0017	0.0007	0.0067	0.0000	0.0012	0.0007	0.0007	0.0007	0.0007	
	Max.Conc.	0.003	0.008	0.003	0.032	0.000	0.006	0.003	0.003	0.003	0.003	
	ECR	1.86E-08	1.58E-08			4.51E-07		5.14E-11		4.88E-07		
EFF	(ppb(v/v))	140	140	140	540	1	140	140	140	140	140	
3/16/2004	(ppb(v/v)) (g/s)	0.0008	0.0008	0.0008	0.0010	0.0000	0.0008	0.0008	0.0008	0.0008	0.0008	
	Max.Conc.	0.004	0.004	0.004	0.014	0.000	0.004	0.004	0.004	0.004	0.004	
	ECR	2.17E-08	7.36E-09			2.81E-07		6.00E-11		3.16E-07		
EFF	(ppb(v/v))	7.1	480	3.1	2300	1	350	4.8	18	2.1		
4/19/2004	(ppb(v/v)) (g/s)	0.0000	0.0027	0.0000	0.0129	0.0000	0.0020	0.0000	0.0001	0.0000	0.0000	
	Max.Conc.	0.000	0.013	0.000	0.060	0.000	0.009	0.000	0.000	0.000	0.000	
	ECR	1.10E-09	2.52E-08			7.18E-07		7.72E-12		7.44E-07		

Note:

Detected constituent concentrations in parts per billion on a volume per volume basis (ppb(v/v)) from Table 13.

8/g = ppb(v/v) x 1,000 (22,500 x 205 x 3,600).

ECR = Excess Cancer Risk = Maximum concentration (in  $\mu\text{g/m}^3$ ) x Unit Risk Factor

IN = Sample collected from air treatment system influent.

EFF = Sample collected from air treatment system effluent.

**Table 14**  
Summary of Air Dispersion Calculations  
Wayne Reclamation & Recycling

Description / Sample Date	Input / Output	CONSTITUENTS										Cumulative Cancer Risk
		Tetrachloroethene	Trichloroethene	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl Chloride	1,1,1-Trichloroethane	1,1-Dichloroethane	Toluene	Non-Carcinogen	
5/18/2004	EFF (ppb[v/v]) (g/s)	150	150	150	510	1	150	150	150	150	150	
	Max. Conc.	0.0008	0.0008	0.0008	0.0029	0.0000	0.0008	0.0008	0.0008	0.0008	0.0008	
	ECR	0.004	0.004	0.004	0.004	0.013	0.004	0.004	0.004	0.004	0.004	
6/23/2004	EFF (ppb[v/v]) (g/s)	2.33E-08	7.89E-09	5.0	1800	1	3.08E-07	6.43E-11	3.39E-07			
	Max. Conc.	0.0001	0.0015	0.0000	0.0101	0.0000	0.0017	0.0000	0.0001	0.0000	0.0000	
	ECR	0.000	0.007	0.000	0.047	0.000	0.008	0.0000	0.001	0.000	0.000	
7/30/2004	EFF (ppb[v/v]) (g/s)	140	250	140	1300	1	2.60E-07	9.36E-12	6.31E-07			
	Max. Conc.	0.0008	0.0014	0.0008	0.0073	0.0000	0.0015	0.0008	0.0008	0.0008	0.0008	
	ECR	0.004	0.007	0.004	0.034	0.000	0.007	0.004	0.004	0.004	0.004	
8/31/2004	EFF (ppb[v/v]) (g/s)	130	180	130	1000	1	1.40E-07	6.00E-11	5.68E-07			
	Max. Conc.	0.0007	0.0010	0.0007	0.036	0.0000	0.0008	0.0007	0.0007	0.0007	0.0007	
	ECR	0.003	0.005	0.003	0.026	0.000	0.004	0.003	0.003	0.003	0.003	
9/22/2004	EFF (ppb[v/v]) (g/s)	140	140	140	620	1	1.40E-07	5.57E-11	3.17E-07			
	Max. Conc.	0.0008	0.0008	0.0008	0.035	0.0000	0.0008	0.0008	0.0008	0.0008	0.0008	
	ECR	0.004	0.004	0.004	0.016	0.000	0.004	0.004	0.004	0.004	0.004	
10/19/2004	EFF (ppb[v/v]) (g/s)	150	180	150	820	1	1.80E-07	1.50E-10	1.40E-07			
	Max. Conc.	0.0008	0.0010	0.0008	0.046	0.0000	0.0010	0.0008	0.0008	0.0008	0.0008	
	ECR	0.004	0.005	0.004	0.022	0.000	0.005	0.004	0.004	0.004	0.004	
11/22/2004	EFF (ppb[v/v]) (g/s)	140	180	150	820	1	3.69E-07	6.43E-11	4.02E-07			
	Max. Conc.	0.0008	0.0012	0.0008	0.036	0.0000	0.0010	0.0008	0.0008	0.0008	0.0008	
	ECR	0.004	0.006	0.004	0.026	0.000	0.004	0.004	0.004	0.004	0.004	
12/17/2004	EFF (ppb[v/v]) (g/s)	140	210	140	1000	1	1.70E-07	6.00E-11	3.82E-07			
	Max. Conc.	0.0008	0.0012	0.0008	0.036	0.0000	0.0010	0.0008	0.0008	0.0008	0.0008	
	ECR	0.004	0.006	0.004	0.026	0.000	0.004	0.004	0.004	0.004	0.004	
1/26/2005	EFF (ppb[v/v]) (g/s)	140	140	140	1300	1	1.40E-07	1.40E-10	1.40E-07			
	Max. Conc.	0.0008	0.0014	0.0008	0.073	0.0000	0.0008	0.0008	0.0008	0.0008	0.0008	
	ECR	0.004	0.004	0.004	0.034	0.000	0.004	0.004	0.004	0.004	0.004	
2/18/2005	EFF (ppb[v/v]) (g/s)	140	140	140	700	1	2.87E-07	6.00E-11	3.16E-07			
	Max. Conc.	0.0008	0.0008	0.0008	0.039	0.0000	0.0008	0.0008	0.0008	0.0008	0.0008	
	ECR	0.004	0.004	0.004	0.018	0.000	0.004	0.004	0.004	0.004	0.004	
	ECR	0.004	0.004	0.004	0.020	0.000	0.004	0.004	0.004	0.004	0.004	
	ECR	2.17E-08	7.36E-09				2.87E-07	6.00E-11	3.16E-07			

Notes:

Detected constituent concentrations in parts per billion on a volume per volume basis (ppb[v/v]) from Table 13.

g's = ppb[v/v] x 1,000 / (22,300 x 2,205 x 3,600).  
 ECR = Excess Cancer Risk = Maximum concentration (in  $\mu\text{g/m}^3$ ) x Unit Risk Factor.  
 TN = Sample collected from air treatment system influent.

EFF = Sample collected from air treatment system effluent.

**Table 14**  
**Summary of Air Dispersion Calculations**  
**Wayne Reclamation & Recycling**

CONSTITUENTS											Cumulative Cancer Risk
Description / Sample Date	Input / Output	Tetrachloroethylene	Trichloroethylene	1,1-Dichloroethylene	cis-1,2-Dichloroethylene	trans-1,2-Dichloroethylene	Vinyl Chloride	1,1,1-Trichloroethane	1,1-Dichloroethane	Toluene	
EFF 3/16/2005	(ppb[v/v]) (g/s)	140 0.0008	140 0.0008	140 0.0008	620 0.0035	620 0.0010	180 0.0010	140 0.0008	140 0.0008	140 0.0008	140
- Max. Conc.	-	0.004	0.004	0.004	0.016	0.004	0.005	0.004	0.004	0.004	0.004
ECR		2.17E-08	7.36E-09				3.69E-07		6.00E-11		3.98E-07
EFF 4/19/2005	(ppb[v/v]) (g/s)	46.8 0.0003	71.8 0.0040	13.2 0.0001	4330 0.0242	14.1 0.0001	13.8 0.0001	15.6 0.0001	53.2 0.0003	13.2 0.0001	13.2
- Max. Conc.	-	0.001	0.019	0.000	0.114	0.000	0.000	0.000	0.001	0.000	0.000
ECR		7.26E-09	3.78E-08				2.83E-08		2.28E-11		7.34E-08
EFF 5/13/2005	(ppb[v/v]) (g/s)	15.1 0.0001	34.7 0.0002	3.4 0.0000	0.71 0.0000	1 0.0000	0.74 0.0000	0.64 0.0000	15.9 0.0001	0.71 0.0000	0.71
- Max. Conc.	-	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ECR		2.34E-09	1.83E-09				1.52E-09		6.82E-12		5.69E-09
EFF 6/03/2005	(ppb[v/v]) (g/s)	21.6 0.0001	52.2 0.0029	3 0.0000	1970 0.0110	113 0.0006	274 0.0015	18.2 0.0001	22 0.0001	1.5 0.0000	1.5
- Max. Conc.	-	0.001	0.014	0.000	0.052	0.003	0.007	0.000	0.001	0.000	0.000
ECR		3.35E-09	2.75E-08				5.62E-07		9.43E-12		5.92E-07
EFF 7/15/2005	(ppb[v/v]) (g/s)	140 0.0008	250 0.0014	140 0.0008	920 0.0052	140 0.0008	140 0.0008	140 0.0008	140 0.0008	140 0.0008	140
- Max. Conc.	-	0.004	0.007	0.004	0.024	0.004	0.004	0.004	0.004	0.004	0.004
ECR		2.17E-08	1.32E-08				2.87E-07		6.00E-11		3.22E-07
EFF 8/26/2005	(ppb[v/v]) (g/s)	140.0 0.0008	710 0.0040	140 2400	140.0 0.0134	140.0 0.0008	530.0 0.0030	140.0 0.0008	140.0 0.0008	140.0 0.0008	140.0
- Max. Conc.	-	0.004	0.019	0.004	0.063	0.004	0.014	0.004	0.004	0.004	0.004
ECR		2.17E-08	3.73E-08				1.09E-06		6.00E-11		1.15E-06
EFF 9/29/2005	(ppb[v/v]) (g/s)	13.8 0.0001	13.8 0.0001	13.8 0.0001	7160.00 0.0401	185 0.010	13.80 0.0001	16.40 0.0001	56.2 0.0003	13.80 0.0001	13.80
- Max. Conc.	-	0.000	0.000	0.000	0.188	0.005	0.000	0.000	0.001	0.000	0.000
ECR		2.14E-09	7.26E-10				2.83E-08		2.41E-11		3.12E-08
EFF 10/17/2005	(ppb[v/v]) (g/s)	140.0 0.0008	300 0.0017	140.0 0.0008	1300 0.0073	140 0.0008	140 0.0008	140 0.0008	140 0.0008	140 0.0008	140.0
- Max. Conc.	-	0.004	0.008	0.004	0.034	0.004	0.004	0.004	0.004	0.004	0.004
ECR		2.17E-08	1.58E-08				2.87E-07		6.00E-11		3.22E-07
EFF 11/03/2005	(ppb[v/v]) (g/s)	69 0.0000	69 0.0000	69 0.0000	69 0.0000	69 0.0000	69 0.0000	69 0.0000	69 0.0000	69 0.0000	69
- Max. Conc.	-	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ECR		2.17E-08	1.58E-08				1.42E-09		2.96E-13		1.56E-09
EFF 12/01/2005	(ppb[v/v]) (g/s)	14.8 0.0001	224 0.0013	14.8 0.0001	1 0.0000	19.4 0.0001	14.8 0.0001	22.5 0.0001	14.8 0.0001	22.5 0.0001	14.8
- Max. Conc.	-	0.000	0.006	0.000	0.000	0.001	0.009	0.0001	0.001	0.0001	0.000
ECR		2.30E-09	1.18E-08				7.06E-07		9.65E-12		7.20E-07

**Notes:**

Detected constituent concentrations in parts per billion on a volume per volume basis (ppb[v/v]) from Table 13

g/s = ppb[v/v] x 1,000 (22,500 x 2,205 x 3,600)

ECR = Excess Cancer Risk = Maximum concentration (in  $\mu\text{g/m}^3$ ) x Unit Risk Factor.

IN = Sample collected from air treatment system influent

EFF = Sample collected from air treatment system effluent

Bold = Cumulative Cancer Risk above action level

Max Conc = Maximum predicted concentration in micrograms per meter cubed ( $\mu\text{g/m}^3$ ) from ISC-LT2 model run output

Unit Risk Factors are

Vinyl Chloride -- 7.80E-05

1,1-Dichloroethane -- 1.63E-08

Trichloroethylene -- 2.00E-06

Tetrachloroethylene -- 5.90E-06

**Table 15**  
**Volatile Organic Compound Removal Rates - Soil Vapor Extraction and Air Stripper Systems**  
**Wayne Reclamation & Recycling**

DATE	CONSTITUENT	SE Area SVE System <sup>(1)</sup>			AST Area - SVE Branch Line G <sup>(2)</sup>			AST Area - SVE Branch Line H <sup>(3)</sup>			Air Stripper <sup>(4)</sup>			Sum of VOCs Removed
		Air Flow Rate <sup>(5)</sup> (scfm)	Conc. (ppb)	Removal Rate (lbs/day)	Air Flow Rate (scfm)	Conc. (ppb)	Removal Rate (lbs/day)	Air Flow Rate (scfm)	Conc. (ppb)	Removal Rate (lbs/day)	Flow Rate (gpm)	EFF Conc. ( $\mu\text{g/L}$ )	Rate (lbs/day)	(lbs/day)
April 1998	Trichlorethene	1,350	540	0.35	140	57	0.00	160	100	0.01	30	140	0.05	0.41
April 1998	cis-1,2-DCE	1,350	1,000	0.53	140	110	0.01	160	200	0.01	30	1,190	0.43	0.98
April 1998	Vinyl Chloride	1,350	0	<u>0.00</u>	140	7	<u>0.00</u>	160	0	<u>0.00</u>	30	240	<u>0.09</u>	<u>0.09</u>
	<b>Total</b>			0.88			0.01			0.02			0.57	<b>1.48</b>
October 1998	Trichlorethene	2,575	2,900	3.60	140	48	0.00	160	300	0.02	56	83	0.06	3.69
October 1998	cis-1,2-DCE	2,575	3,500	3.54	140	50	0.00	160	250	0.02	56	254	0.17	3.73
October 1998	Vinyl Chloride	2,575	0	<u>0.00</u>	140	0	<u>0.00</u>	160	0	<u>0.00</u>	56	110	<u>0.07</u>	<u>0.07</u>
	<b>Total</b>			7.14			0.01			0.04			0.30	<b>7.49</b>
April 1999	Trichlorethene	2,730	94	0.12	98	8	0.00	112	21	0.00	71	254	0.22	0.34
April 1999	cis-1,2-DCE	2,730	210	0.23	98	21	0.00	112	47	0.00	71	1,560	1.33	1.56
April 1999	Vinyl Chloride	2,730	15	<u>0.01</u>	98	2	<u>0.00</u>	112	2	<u>0.00</u>	71	210	<u>0.18</u>	<u>0.19</u>
	<b>Total</b>			0.36			0.00			0.00			1.73	<b>2.09</b>
Nov/Dec 1999	Trichlorethene	2,590	540	0.68	187	9	0.00	213	23	0.00	47	120	0.07	0.75
Nov/Dec 1999	cis-1,2-DCE	2,590	1,300	1.32	187	24	0.00	213	89	0.01	47	888	0.50	1.83
Nov/Dec 1999	Vinyl Chloride	2,590	29	<u>0.02</u>	187	4	<u>0.00</u>	213	0	<u>0.00</u>	47	120	<u>0.07</u>	<u>0.09</u>
	<b>Total</b>			2.01			0.00			0.01			0.64	<b>2.66</b>

**Notes:**

(1) Volatile organic compound (VOC) removal rate based on air flow rate and VOC concentrations measured in combined Southeast (SE) Area soil vapor extraction (SVE) line with air sparging off.

(2) VOC removal rate based on air flow rate and VOC concentrations measured in Aboveground Storage Tank (AST) Area Branch Line G.

(3) VOC removal rate based on air flow rate and VOC concentrations measured in AST Area Branch Line H.

(4) VOC removal rate based on groundwater flow rate and difference between groundwater influent and effluent concentrations.

(5) SE Area air flow rate based on sum of the six branch line field measurements.

IN = Influent; EFF = effluent; Conc. = concentration; scfm = standard cubic feet per minute; ppb = parts per billion;  $\mu\text{g/L}$  = micrograms per liter; lbs = pounds; gpm = gallons per minute; DCE = dichlorethane.

**Table 15**  
**Volatile Organic Compound Removal Rates - Soil Vapor Extraction and Air Stripper Systems**  
**Wayne Reclamation & Recycling**

DATE	CONSTITUENT	SE Area SVE System <sup>(1)</sup>			AST Area - SVE Branch Line G <sup>(2)</sup>			AST Area - SVE Branch Line H <sup>(3)</sup>			Air Stripper <sup>(4)</sup>			Sum of VOCs Removed (lbs/day)
		Air Flow Rate <sup>(5)</sup> (scfm)	Conc. (ppb)	Removal Rate (lbs/day)	Air Flow Rate (scfm)	Conc. (ppb)	Removal Rate (lbs/day)	Air Flow Rate (scfm)	Conc. (ppb)	Removal Rate (lbs/day)	Flow Rate (gpm)	EFF Conc. ( $\mu\text{g}/\text{L}$ )	Rate (lbs/day)	
April 2000	Trichlorethene	1,500	710	0.51	187	590	0.05	213	50	0.01	51	250	0.15	0.73
April 2000	cis-1,2-DCE	1,500	1,400	0.82	187	330	0.02	213	150	0.01	51	1,450	0.89	1.75
April 2000	Vinyl Chloride	1,500	0	<u>0.00</u>	187	0	<u>0.00</u>	213	0	<u>0.00</u>	51	170	<u>0.10</u>	<u>0.10</u>
	<b>Total</b>		1.34			0.08		0.02				1.15	2.58	
October 2000	Trichlorethene	1,500	750	0.54	187	710	0.06	213	78	0.01	55	120	0.08	0.69
October 2000	cis-1,2-DCE	1,500	1,300	0.77	187	300	0.02	213	190	0.02	55	1,580	1.04	1.85
October 2000	Vinyl Chloride	1,500	0	<u>0.00</u>	187	0	<u>0.00</u>	213	0	<u>0.00</u>	55	170	<u>0.11</u>	<u>0.11</u>
	<b>Total</b>		1.31			0.09		0.02				1.24	2.65	
April 2001	Trichlorethene	1,600	140	0.11	105	57	0.00	120	48	0.00	65	190	0.15	0.26
April 2001	cis-1,2-DCE	1,600	150	0.09	105	21	0.00	120	70	0.00	65	1,230	0.96	1.06
April 2001	Vinyl Chloride	1,600	0	<u>0.00</u>	105	0	<u>0.00</u>	120	0	<u>0.00</u>	65	146	<u>0.11</u>	<u>0.11</u>
	<b>Total</b>		0.20			0.00		0.01				1.22	1.44	
Oct/Nov 2001	Trichloroethene	1,600	410	0.32	225	150	0.02	225	0	0.00	90	241	0.26	0.59
Oct/Nov 2001	cis-1,2-DCE	1,600	1,500	0.94	225	130	0.01	225	0	0.00	90	1,447	1.56	2.52
Oct/Nov 2001	Vinyl Chloride	1,600	0	<u>0.00</u>	225	3	<u>0.00</u>	225	0	<u>0.00</u>	90	121	<u>0.13</u>	<u>0.13</u>
	<b>Total</b>		1.26			0.03		0.00				1.96	3.24	

**Notes:**

(1) Volatile organic compound (VOC) removal rate based on air flow rate and VOC concentrations measured in combined Southeast (SE) Area soil vapor extraction (SVE) line with air sparging off.

(2) VOC removal rate based on air flow rate and VOC concentrations measured in Aboveground Storage Tank (AST) Area Branch Line G.

(3) VOC removal rate based on air flow rate and VOC concentrations measured in AST Area Branch Line H.

(4) VOC removal rate based on groundwater flow rate and difference between groundwater influent and effluent concentrations.

(5) SE Area air flow rate based on sum of the six branch line field measurements.

IN = Influent; EFF = effluent; Conc. = concentration; scfm = standard cubic feet per minute; ppb = parts per billion;  $\mu\text{g}/\text{L}$  = micrograms per liter; lbs = pounds; gpm = gallons per minute; DCE = dichlorethene.

**Volatile Organic Compound Removal Rates - Soil Vapor Extraction and Air Stripper Systems**  
**Wayne Reclamation & Recycling**

DATE	CONSTITUENT	SE Area SVE System <sup>(1)</sup>			AST Area - SVE Branch Line G <sup>(2)</sup>			AST Area - SVE Branch Line H <sup>(3)</sup>			Air Stripper <sup>(4)</sup>			Sum of VOCs Removed (lbs/day)
		Air Flow Rate <sup>(5)</sup> (scfm)	Conc. (ppb)	Removal Rate (lbs/day)	Air Flow Rate (scfm)	Conc. (ppb)	Removal Rate (lbs/day)	Air Flow Rate (scfm)	Conc. (ppb)	Removal Rate (lbs/day)	Flow Rate (gpm)	EFF Conc. ( $\mu\text{g/L}$ )	Removal Rate (lbs/day)	
		Trichloroethene	2,600	330	0.41	245	22	0.00	245	48	0.01	65	74	0.06
April 2002	cis-1,2-DCE	2,600	370	0.38	245	27	0.00	245	60	0.01	65	692	0.54	0.93
April 2002	Vinyl Chloride	2,600	18	<u>0.01</u>	245	0.92	<u>0.00</u>	245	2.1	<u>0.00</u>	65	160	<u>0.12</u>	<u>0.14</u>
	<b>Total</b>		0.80			0.01			0.01		0.72		<b>1.54</b>	
October 2002	Trichloroethene	1,200	430	0.25	280	180	0.02	(susp)	0	0.00	44	300	0.16	0.43
October 2002	cis-1,2-DCE	1,200	790	0.37	280	0	0.00	(susp)	0	0.00	44	1,359	0.72	1.09
October 2002	Vinyl Chloride	1,200	0	<u>0.00</u>	280	0	<u>0.00</u>	(susp)	0	<u>0.00</u>	44	220	<u>0.12</u>	<u>0.12</u>
	<b>Total</b>		0.62			0.02			0.00			0.99	<b>1.64</b>	
April 2003	Trichloroethene	1,300	270	0.17	640	280	0.09	(susp)	0	0.00	50	268	0.16	0.42
April 2003	cis-1,2-DCE	1,300	470	0.24	640	190	0.05	(susp)	0	0.00	50	1,405	0.84	1.13
April 2003	Vinyl Chloride	1,300	0	<u>0.00</u>	640	0	<u>0.00</u>	(susp)	0	<u>0.00</u>	50	134	<u>0.08</u>	<u>0.08</u>
	<b>Total</b>		0.41			0.13			0.00			1.09	<b>1.63</b>	
October 2003	Trichloroethene	2,100	240	0.24	420	260	0.05	(susp)	0	0.00	44	180	0.10	0.39
October 2003	cis-1,2-DCE	2,100	340	0.28	420	0	0.00	(susp)	0	0.00	44	1,694	0.90	1.18
October 2003	Vinyl Chloride	2,100	0	<u>0.00</u>	420	0	<u>0.00</u>	(susp)	0	<u>0.00</u>	44	140.7	<u>0.07</u>	<u>0.07</u>
	<b>Total</b>		0.52			0.05			0.00			1.07	<b>1.64</b>	

**Notes:**

<sup>(1)</sup> Volatile organic compound (VOC) removal rate based on air flow rate and VOC concentrations measured in combined Southeast (SE) Area soil vapor extraction (SVE) line with air sparging off.

<sup>(2)</sup> VOC removal rate based on air flow rate and VOC concentrations measured in Aboveground Storage Tank (AST) Area Branch Line G.

<sup>(3)</sup> VOC removal rate based on air flow rate and VOC concentrations measured in AST Area Branch Line H.

<sup>(4)</sup> VOC removal rate based on groundwater flow rate and difference between groundwater influent and effluent concentrations.

<sup>(5)</sup> SE Area air flow rate based on sum of the six branch line field measurements.

IN = Influent; EFF = effluent; Conc. = concentration; scfm = standard cubic feet per minute; ppb = parts per billion;  $\mu\text{g/L}$  = micrograms per liter; lbs = pounds; gpm = gallons per minute; DCE = dichloroethene. (susp) = The operation of Branch Line H was suspended in October 2002.

**Table 15**  
**Volatile Organic Compound Removal Rates - Soil Vapor Extraction and Air Stripper Systems**  
**Wayne Reclamation & Recycling**

DATE	CONSTITUENT	SE Area SVE System <sup>(1)</sup>			AST Area - SVE Branch Line G <sup>(2)</sup>			AST Area - SVE Branch Line H <sup>(3)</sup>			Air Stripper <sup>(4)</sup>			Sum of VOCs Removed (lbs/day)
		Air Flow Rate <sup>(5)</sup> (scfm)	Conc. (ppb)	Removal Rate (lbs/day)	Air Flow Rate (scfm)	Conc. (ppb)	Removal Rate (lbs/day)	Air Flow Rate (scfm)	Conc. (ppb)	Removal Rate (lbs/day)	Groundwater Flow Rate (gpm)	EFF Conc. ( $\mu\text{g/L}$ )	Rate (lbs/day)	
April 2004	Trichloroethene	1,000	0	0.00	470	360	0.08	(susp)	0	0.00	67	149	0.12	0.20
April 2004	cis-1,2-DCE	1,000	160	0.06	470	160	0.03	(susp)	0	0.00	67	690	0.56	0.65
April 2004	Vinyl Chloride	1,000	0	<u>0.00</u>	470	0	<u>0.00</u>	(susp)	0	<u>0.00</u>	67	147.9	<u>0.12</u>	<u>0.12</u>
	<b>Total</b>			0.06				0.11		0.00			0.79	<b>0.97</b>
October 2004	Trichloroethene	900	180	0.07	470	350	0.08	(susp)	0	0.00	48	336	0.19	0.34
October 2004	cis-1,2-DCE	900	330	0.09	470	170	0.02	(susp)	0	0.00	48	772	0.45	0.56
October 2004	Vinyl Chloride	900	0	<u>0.00</u>	470	18.4	<u>0.00</u>	(susp)	0	<u>0.00</u>	48	260	<u>0.15</u>	<u>0.15</u>
	<b>Total</b>			0.16				0.11		0.00			0.79	<b>1.05</b>
April 2005	Trichloroethene	860	323	0.11	280	105	0.01	(susp)	0	0.00	74	251	0.22	0.35
April 2005	cis-1,2-DCE	860	742	0.19	280	64.6	0.01	(susp)	0	0.00	74	1,670	1.48	1.68
April 2005	Vinyl Chloride	860	0	<u>0.00</u>	280	0	<u>0.00</u>	(susp)	0	<u>0.00</u>	74	210	<u>0.19</u>	<u>0.19</u>
	<b>Total</b>			0.31				0.02		0.00			1.89	<b>2.22</b>
October 2005	Trichloroethene	560	230	0.05	218	260	0.03	(susp)	0	0.00	113	205	0.28	0.36
October 2005	cis-1,2-DCE	560	400	0.07	218	290	0.02	(susp)	0	0.00	113	1,711	2.32	2.41
October 2005	Vinyl Chloride	560	0	<u>0.00</u>	218	0	<u>0.00</u>	(susp)	0	<u>0.00</u>	113	168.7	<u>0.23</u>	<u>0.23</u>
	<b>Total</b>			0.12				0.05		0.00			2.83	<b>3.00</b>

**Notes:**

<sup>(1)</sup> Volatile organic compound (VOC) removal rate based on air flow rate and VOC concentrations measured in combined Southeast (SF) Area soil vapor extraction (SVE) line with air sparging off.

<sup>(2)</sup> VOC removal rate based on air flow rate and VOC concentrations measured in Aboveground Storage Tank (AST) Area Branch Line G.

<sup>(3)</sup> VOC removal rate based on air flow rate and VOC concentrations measured in AST Area Branch Line H.

<sup>(4)</sup> VOC removal rate based on groundwater flow rate and difference between groundwater influent and effluent concentrations.

<sup>(5)</sup> SF Area air flow rate based on sum of the six branch line field measurements.

IN = Influent; EFF = effluent; Conc. = concentration; scfm = standard cubic feet per minute; ppb = parts per billion;  $\mu\text{g/l}$  = micrograms per liter; lbs = pounds; gpm = gallons per minute; DCE = dichloroethene. (susp) = The operation of Branch Line H was suspended in October 2002.

The soil vapor extraction (SVE) and air sparge (AS) systems were temporarily shut down on November 13, 2005 for assessment of the vadose zone and are expected to be restarted in April 2006.

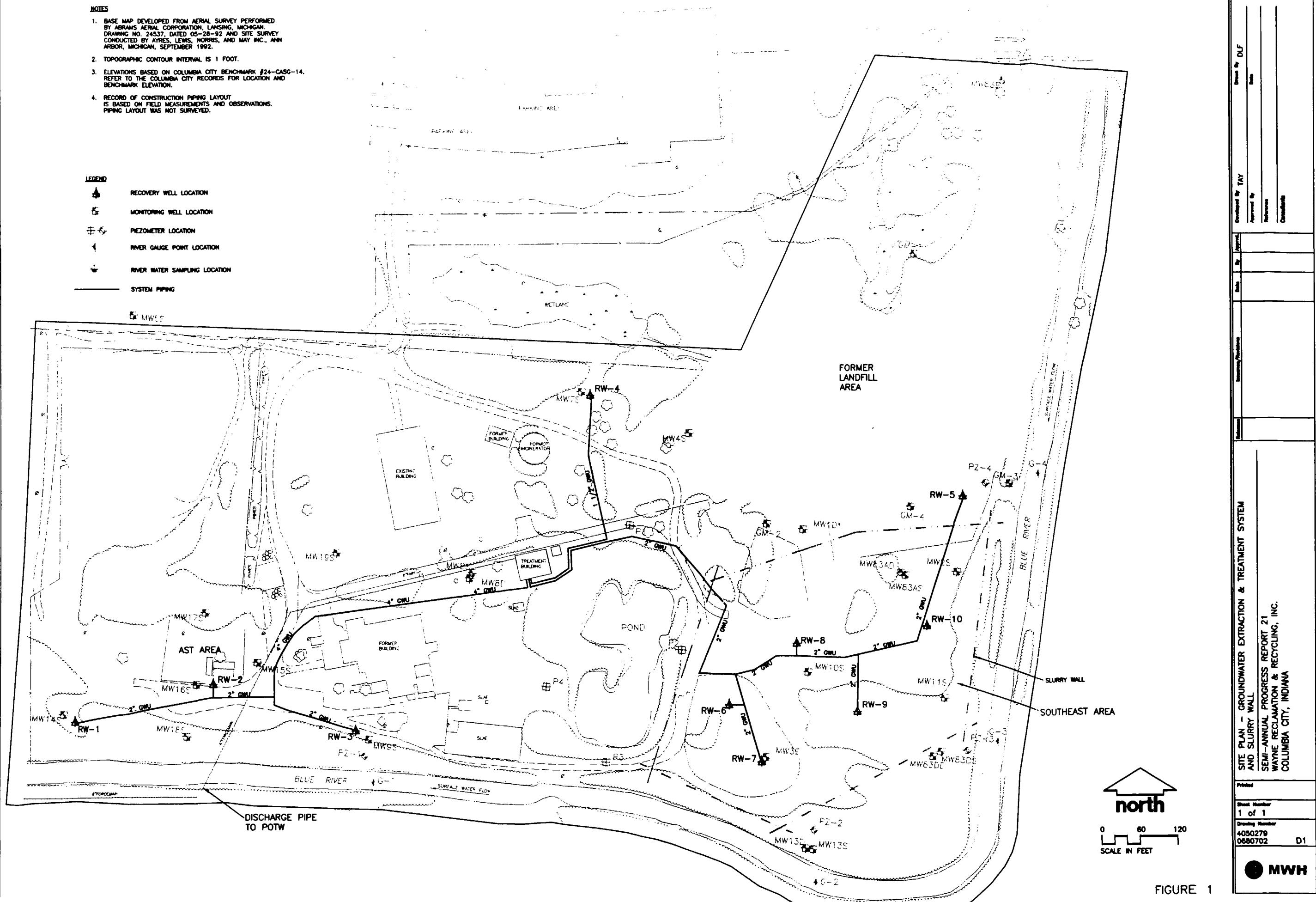
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## **Figures**

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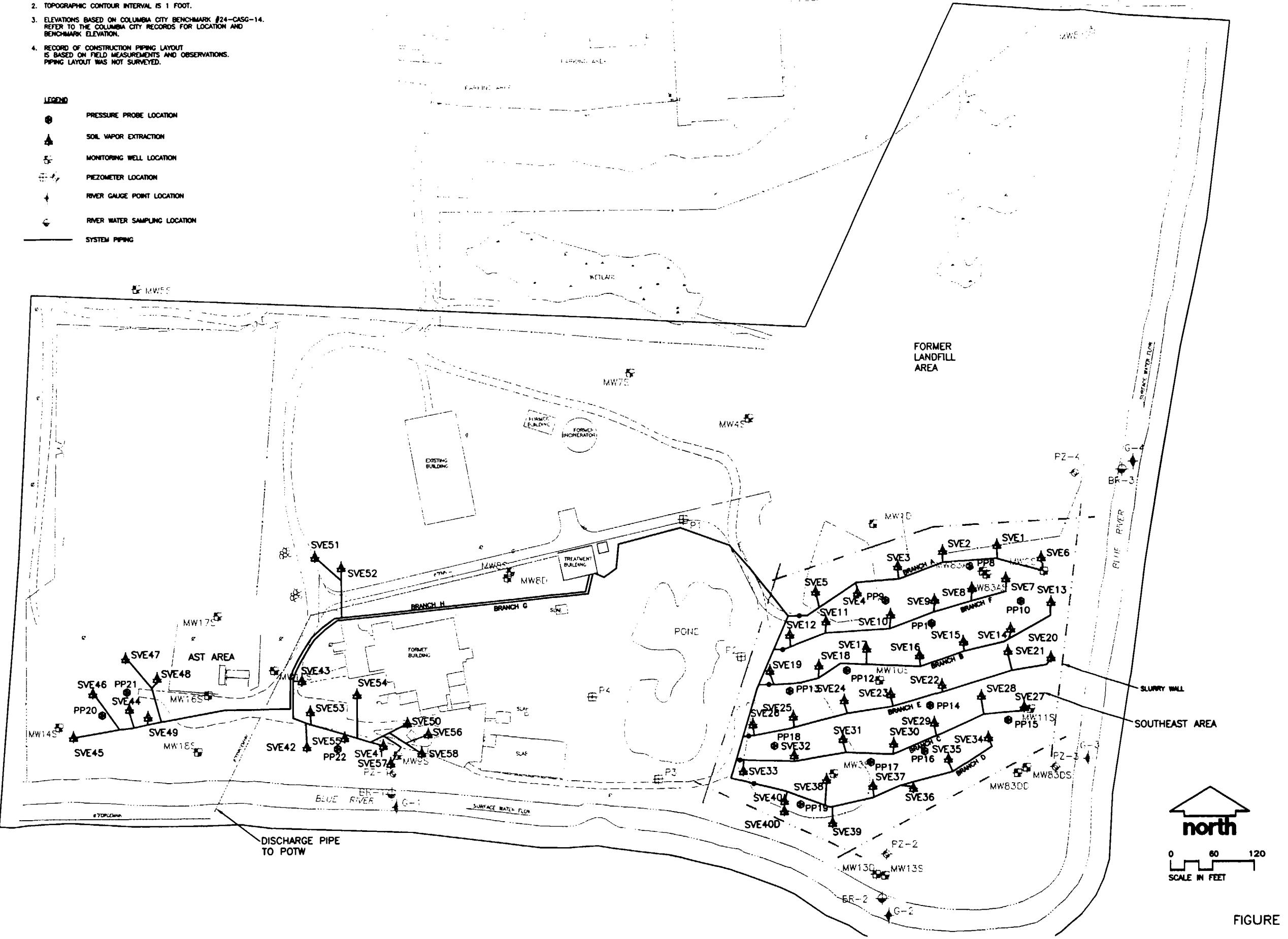
1. BASE MAP DEVELOPED FROM AERIAL SURVEY PERFORMED BY ABRAMS AERIAL CORPORATION, LANSING, MICHIGAN. DRAWING NO. 24337, DATED 05-28-92 AND SITE SURVEY CONDUCTED BY ATYES, LEWIS, NORRIS, AND MAY INC., ANN ARBOR, MICHIGAN, SEPTEMBER 1992.
  2. TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
  3. ELEVATIONS BASED ON COLUMBIA CITY BENCHMARK #24-CASG-14. REFER TO THE COLUMBIA CITY RECORDS FOR LOCATION AND BENCHMARK ELEVATION.
  4. RECORD OF CONSTRUCTION PIPING LAYOUT IS BASED ON FIELD MEASUREMENTS AND OBSERVATIONS. PIPING LAYOUT WAS NOT SURVEYED.



## FIGURE 1

Notes

1. BASE MAP DEVELOPED FROM AERIAL SURVEY PERFORMED BY ABRAMS AERIAL CORPORATION, LANSING, MICHIGAN. DRAWING NO. 24537, DATED 05-28-92 AND SITE SURVEY CONDUCTED BY ATYES, LEWIS, NORRIS, AND MAY INC., ANN ARBOR, MICHIGAN, SEPTEMBER 1992.
  2. TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
  3. ELEVATIONS BASED ON COLUMBIA CITY BENCHMARK #24-CASC-14. REFER TO THE COLUMBIA CITY RECORDS FOR LOCATION AND BENCHMARK ELEVATION.
  4. RECORD OF CONSTRUCTION PIPING LAYOUT IS BASED ON FIELD MEASUREMENTS AND OBSERVATIONS. PIPING LAYOUT WAS NOT SURVEYED.



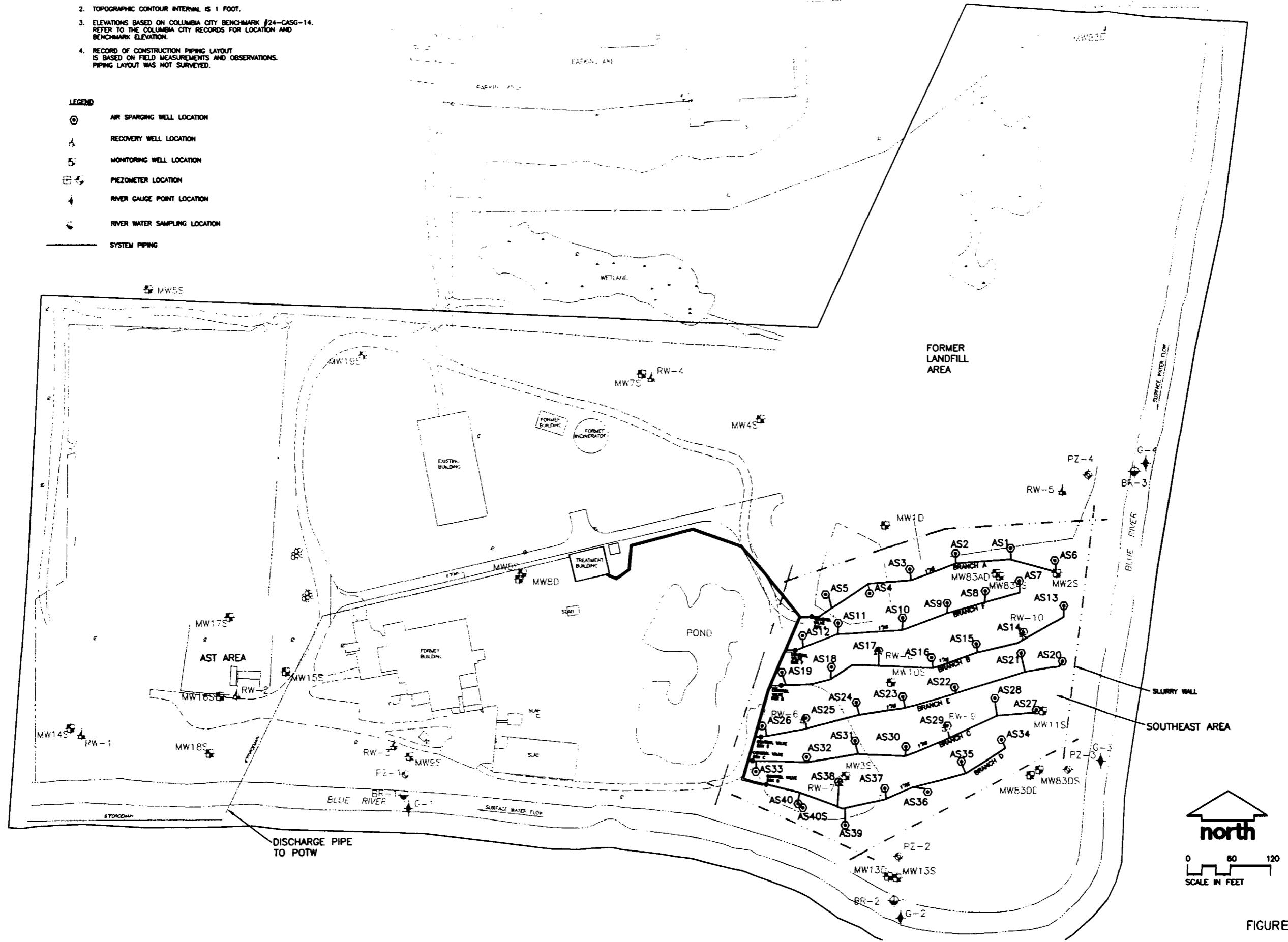
## FIGURE 2

NOJ

1. BASE MAP DEVELOPED FROM AERIAL SURVEY PERFORMED BY ABRAMS AERIAL CORPORATION, LANSING, MICHIGAN. DRAWING NO. 24537, DATED 05-28-92 AND SITE SURVEY CONDUCTED BY ATRIES, LEWIS, NORRIS, AND MAY INC., ANN ARBOR, MICHIGAN, SEPTEMBER 1992.
  2. TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
  3. ELEVATIONS BASED ON COLUMBIA CITY BENCHMARK #24-CASC-1. REFER TO THE COLUMBIA CITY RECORDS FOR LOCATION AND BENCHMARK ELEVATION.
  4. RECORD OF CONSTRUCTION PIPING LAYOUT IS BASED ON FIELD MEASUREMENTS AND OBSERVATIONS. PIPING LAYOUT WAS NOT SURVEYED.

LEADER

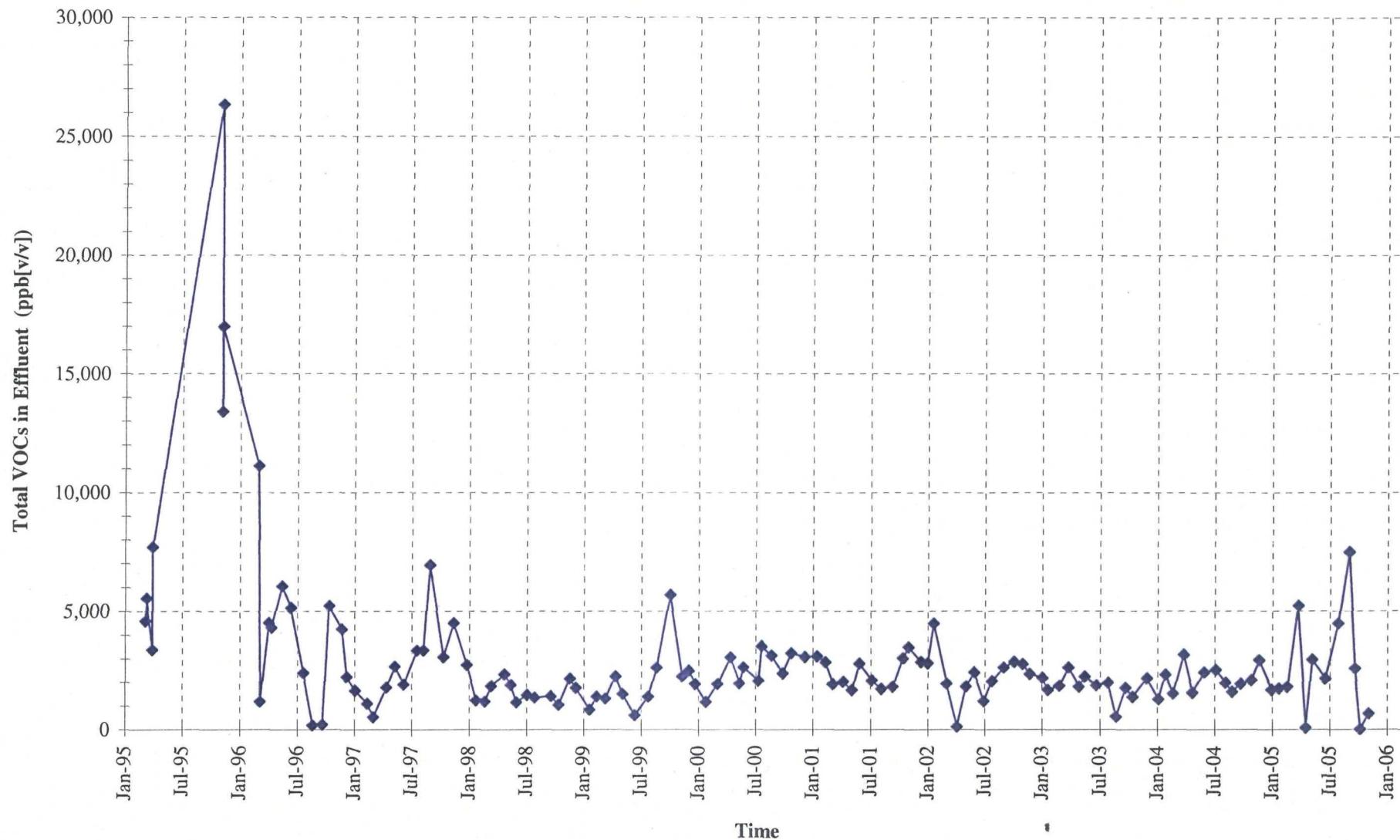
- ① AIR SPARGING WELL LOCATION
  - ② RECOVERY WELL LOCATION
  - ③ MONITORING WELL LOCATION
  - ④ PIEZOMETER LOCATION
  - ⑤ RIVER GAUGE POINT LOCATION
  - ⑥ RIVER WATER SAMPLING LOCATION
  - ⑦ SYSTEM PIPING



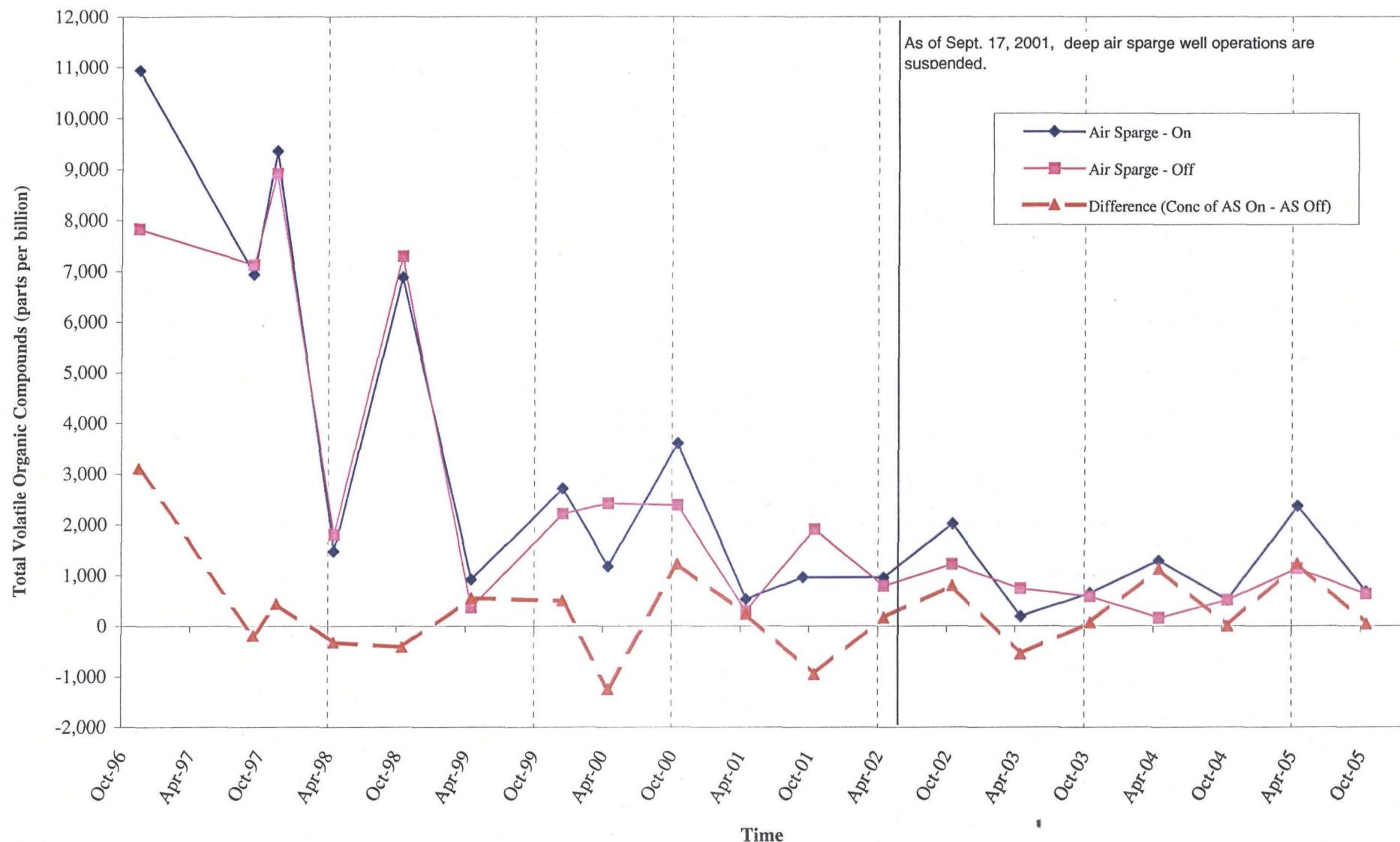
**FIGURE 3**

SITE PLAN - AIR SPARGING SYSTEM		Semi-Annual Progress Report 21	
		Wayne Reclamation & Recycling, Inc.	
		Columbus City, Indiana	
Printed			
Sheet Number 1 of 1			
Drawing Number 4050279 0680702			D3
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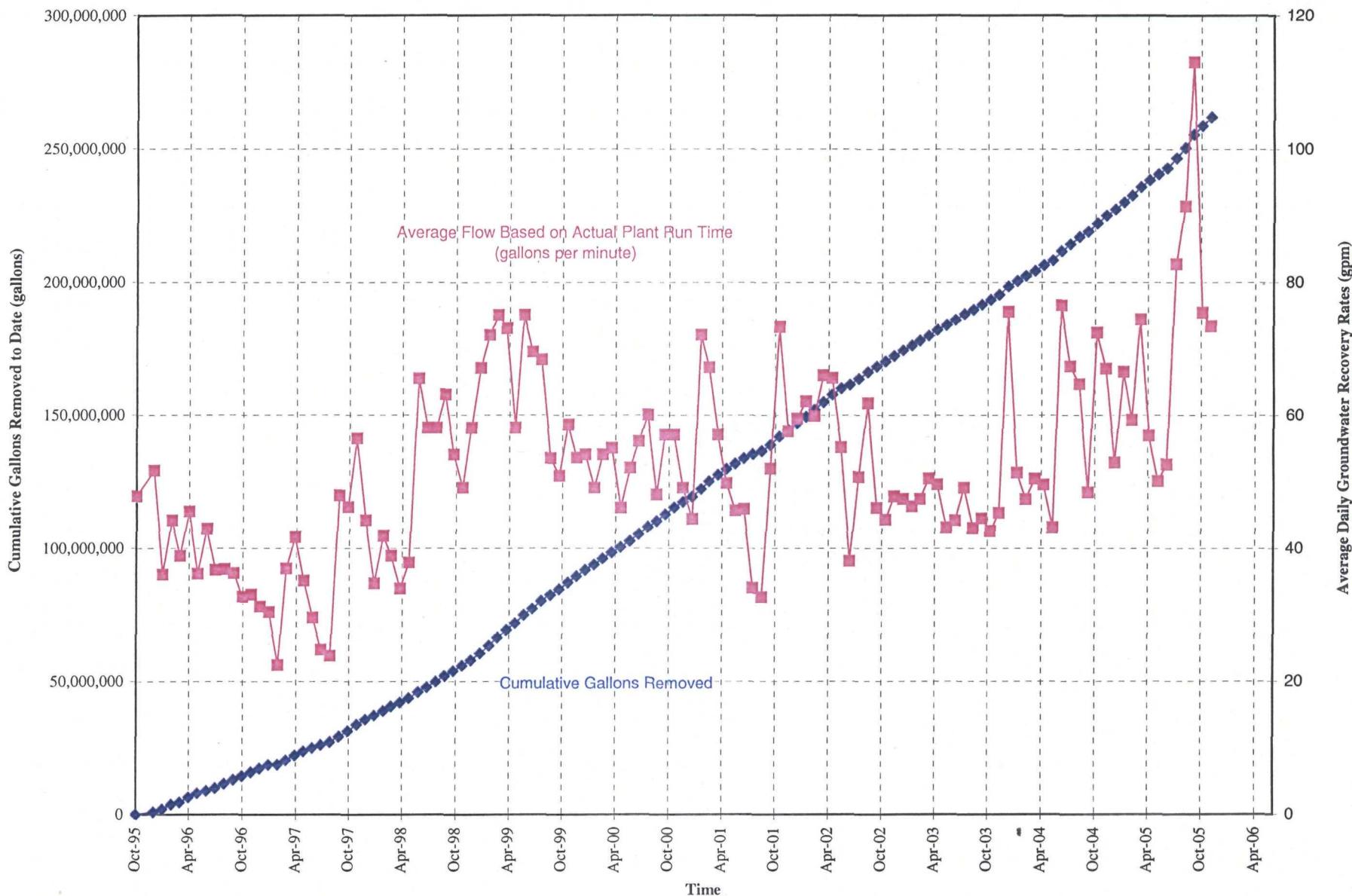
**Figure 4**  
**Summary of Groundwater Treatment and SVE Systems Combined Air System Effluent Data**  
**Wayne Reclamation & Recycling**



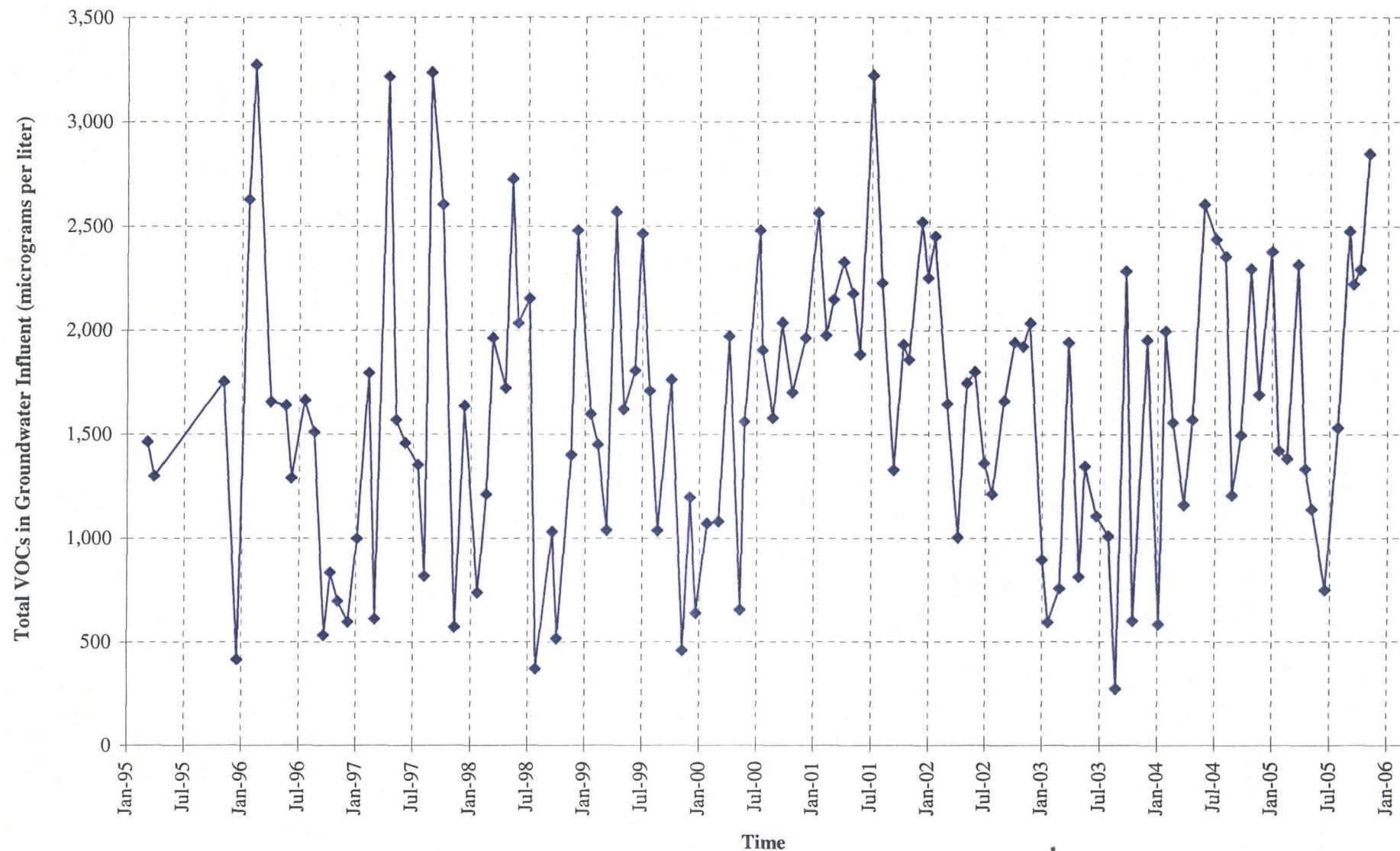
**Figure 5**  
**Effect of Air Sparge on Soil Vapor Extraction Volatile Organic Compound Concentrations, Southeast Area**  
**Wayne Reclamation & Recycling**



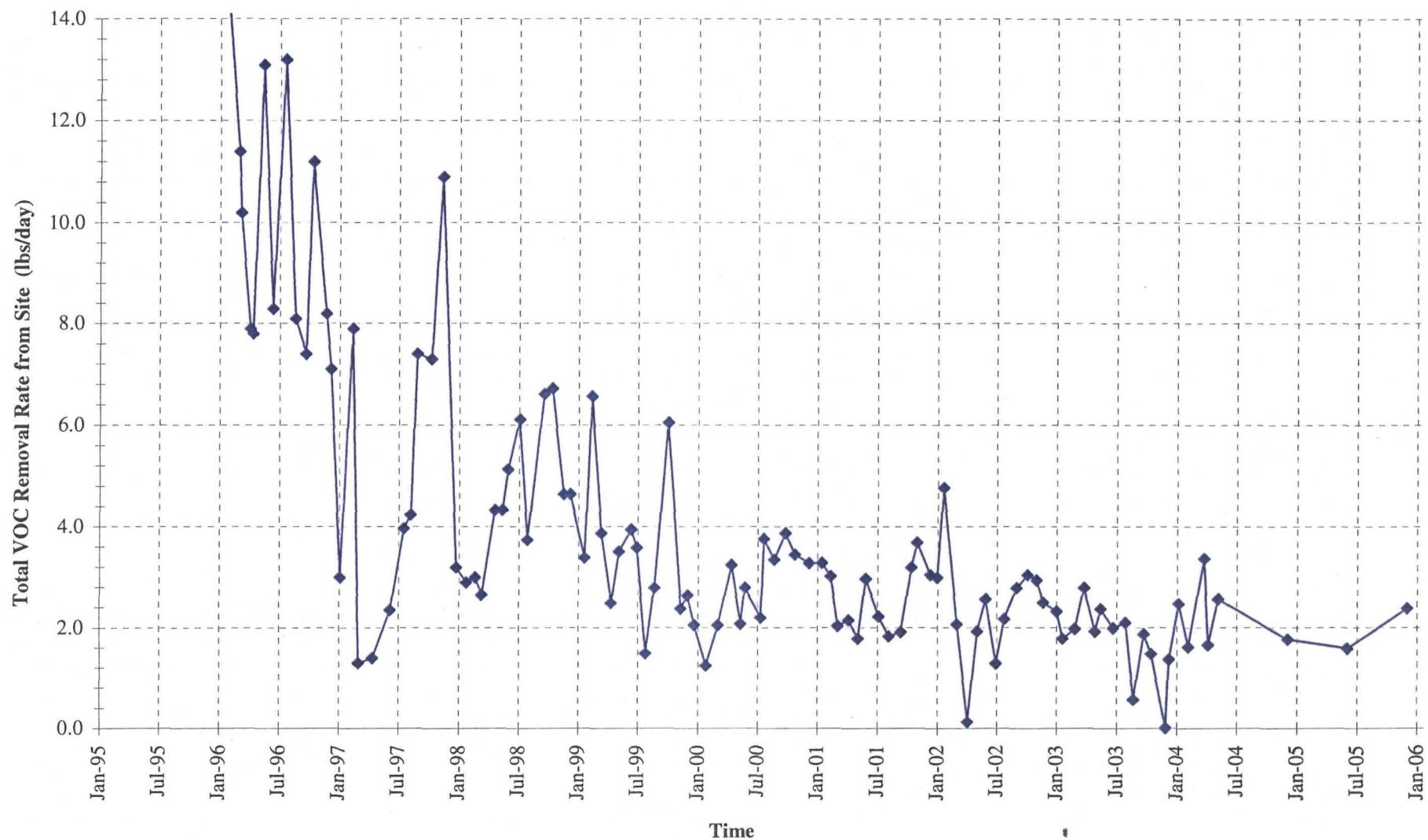
**Figure 6**  
**Cumulative and Sustained Groundwater Recovery**  
**Wayne Reclamation & Recycling**



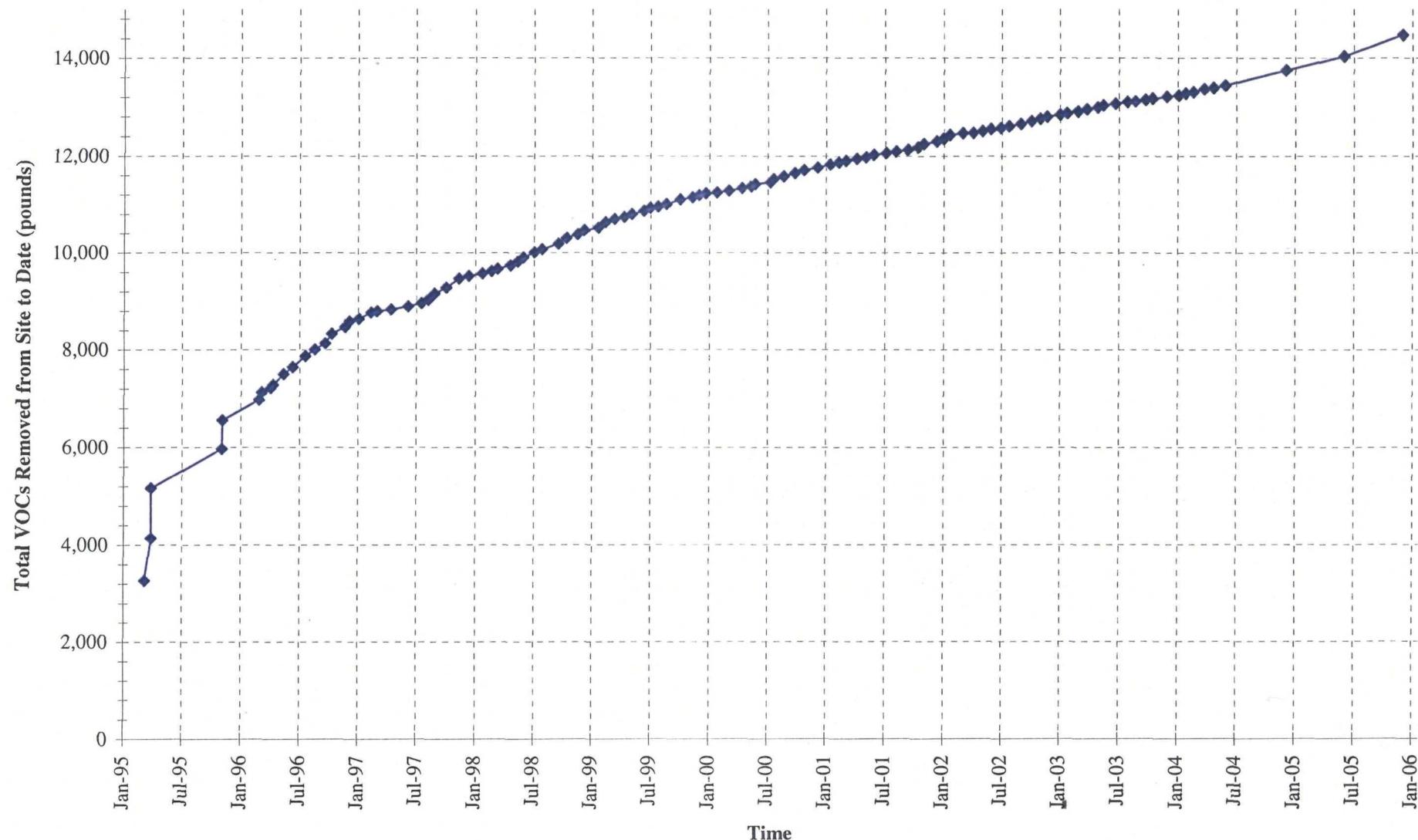
**Figure 7**  
**Summary of Groundwater Treatment System Influent Data**  
**Wayne Reclamation & Recycling**



**Figure 9**  
**Summary of Site Volatile Organic Compound Removal Rates - Soil and Groundwater Remediation Systems**  
**Wayne Reclamation & Recycling**



**Figure 10**  
**Cumulative Volatile Organic Compounds Removed From Site - Soil and Groundwater Remediation Systems**  
**Wayne Reclamation & Recycling**

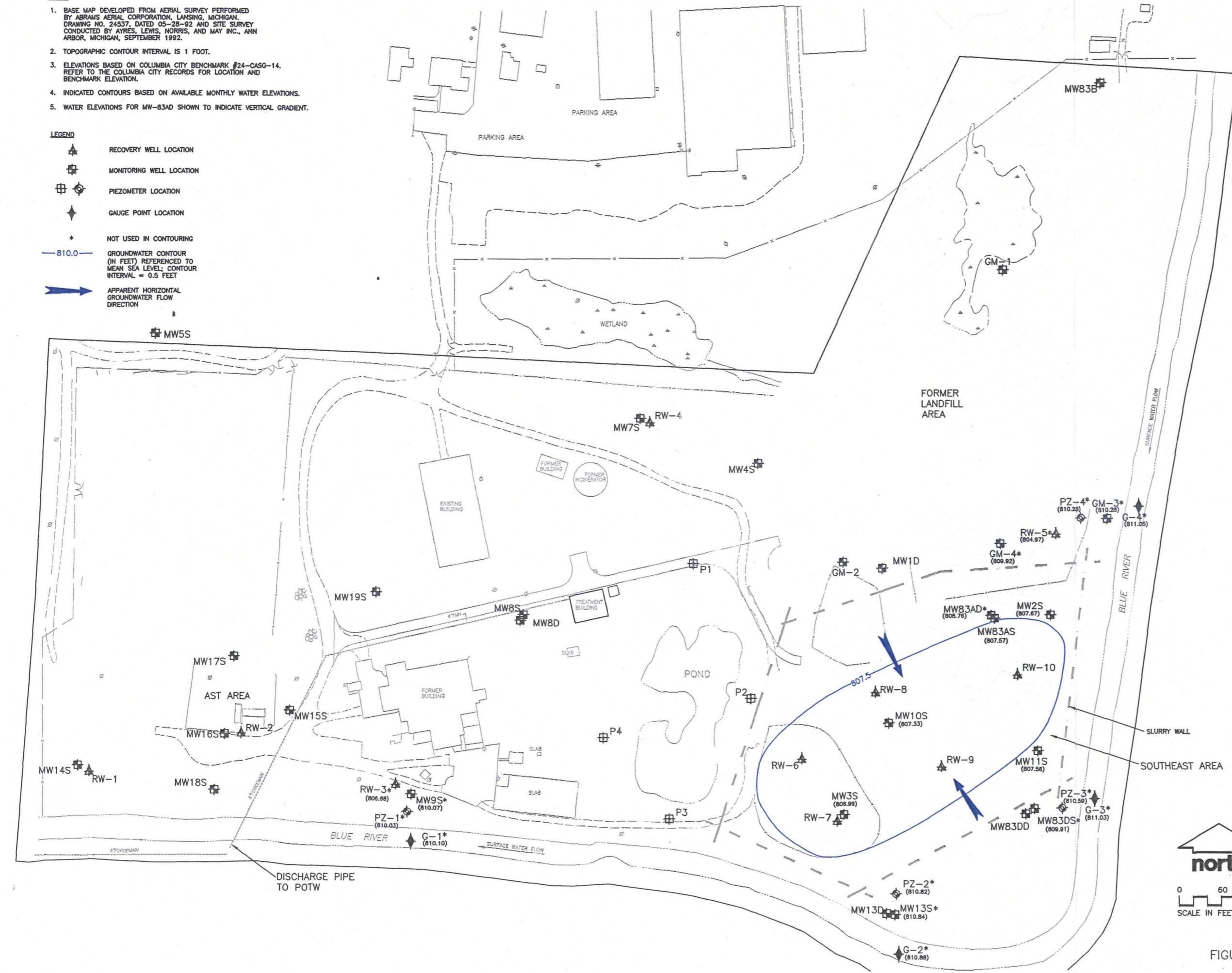


**NOTES**

1. BASE MAP DEVELOPED FROM AERIAL SURVEY PERFORMED BY ABRAC AERIAL CORPORATION, LANSING, MICHIGAN, DRAWING NO. 24535, DRAWN 05-22-92 AND SITE SURVEY CONDUCTED BY ATREE, LEWIS, NORRIS, AND MAY INC., ANN ARBOR, MICHIGAN, SEPTEMBER 1992.
2. TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
3. ELEVATIONS BASED ON COLUMBIA CITY BENCHMARK #24-CASG-14. REFER TO THE COLUMBIA CITY RECORDS FOR LOCATION AND BENCHMARK ELEVATION.
4. INDICATED CONTOURS BASED ON AVAILABLE MONTHLY WATER ELEVATIONS.
5. WATER ELEVATIONS FOR MW-83AD SHOWN TO INDICATE VERTICAL GRADIENT.

**LEGEND**

- ▲ RECOVERY WELL LOCATION
- MONITORING WELL LOCATION
- ◆ PREZOMETER LOCATION
- ◆ GAUGE POINT LOCATION
- \* NOT USED IN CONTOURING
- 810.0 — GROUNDWATER CONTOUR (IN FEET) REFERENCED TO MEAN SEA LEVEL; CONTOUR INTERVAL = 0.5 FEET
- APPARENT HORIZONTAL GROUNDWATER FLOW DIRECTION



GROUNDWATER CONTOURS - JULY 2005	
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Sheet Number	1 of 7
Drawing Number	4050279 0680702
	D4
	<b>MWH</b>

FIGURE 8-1

**NOTES**

1. BASE MAP DEVELOPED FROM AERIAL SURVEY PERFORMED BY GRANGE CO. CORPORATION, LANSING, MICHIGAN, DRAWING NO. 24537, DATED 08-25-92 AND SITE SURVEY CONDUCTED BY AYRES, LEWIS, NORRIS, AND MAY INC., ANN ARBOR, MICHIGAN, SEPTEMBER 1992.
2. TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
3. ELEVATIONS BASED ON COLUMBIA CITY BENCHMARK #24-CASG-14. REFER TO THE COLUMBIA CITY RECORDS FOR LOCATION AND BENCHMARK ELEVATION.
4. INDICATED CONTOURS BASED ON AVAILABLE MONTHLY WATER ELEVATIONS.
5. WATER ELEVATIONS FOR MW-83AD SHOWN TO INDICATE VERTICAL GRADIENT.

**LEGEND**

- ▲ RECOVERY WELL LOCATION
- MONITORING WELL LOCATION
- ◆ PIEZOMETER LOCATION
- ◆ GAUGE POINT LOCATION
- \* NOT USED IN CONTOURING
- GROUNDWATER CONTOUR (IN FEET) REFERENCED TO MEAN SEA LEVEL; CONTOUR INTERVAL = 0.5 FEET
- APPARENT HORIZONTAL GROUNDWATER FLOW DIRECTION

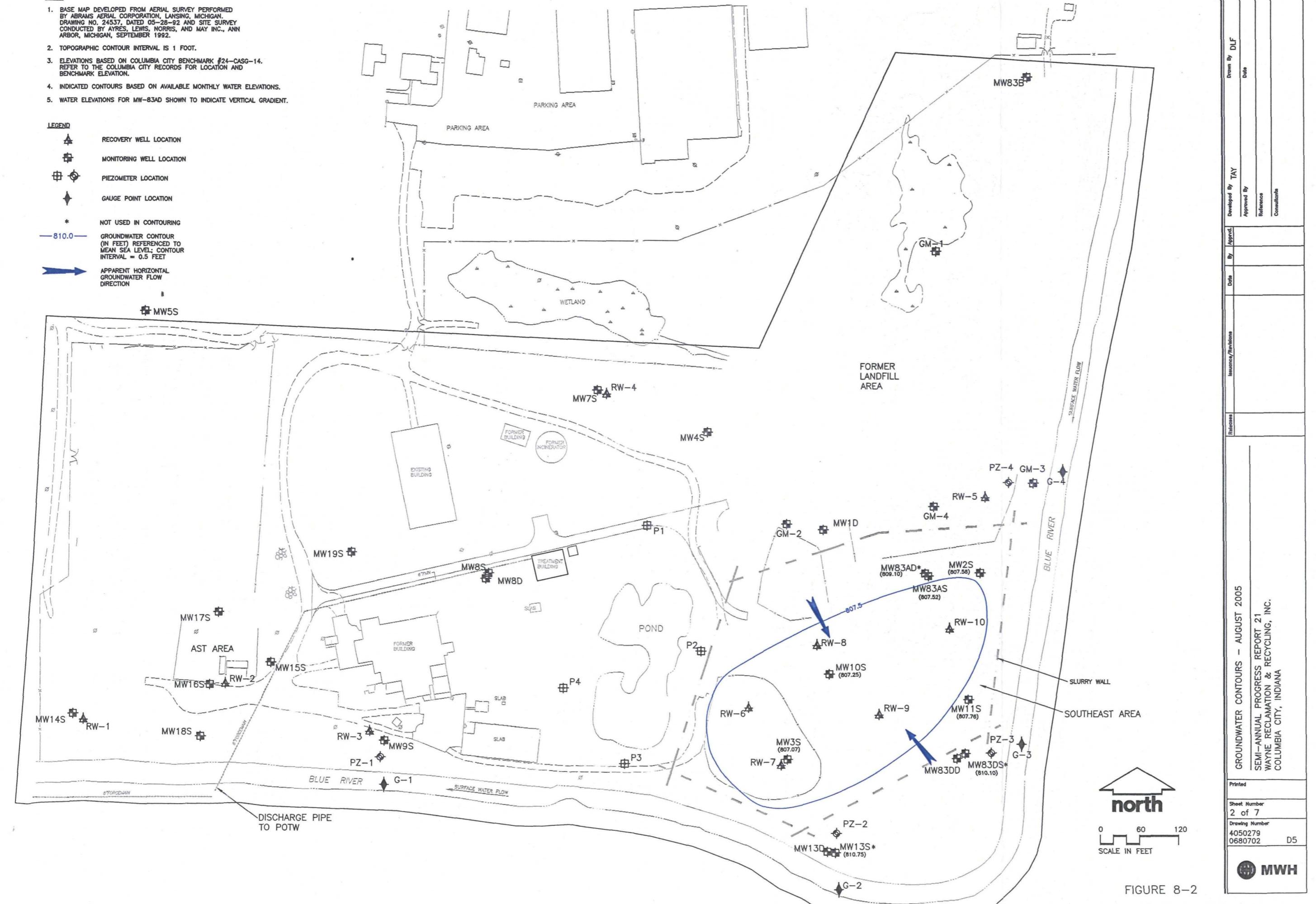
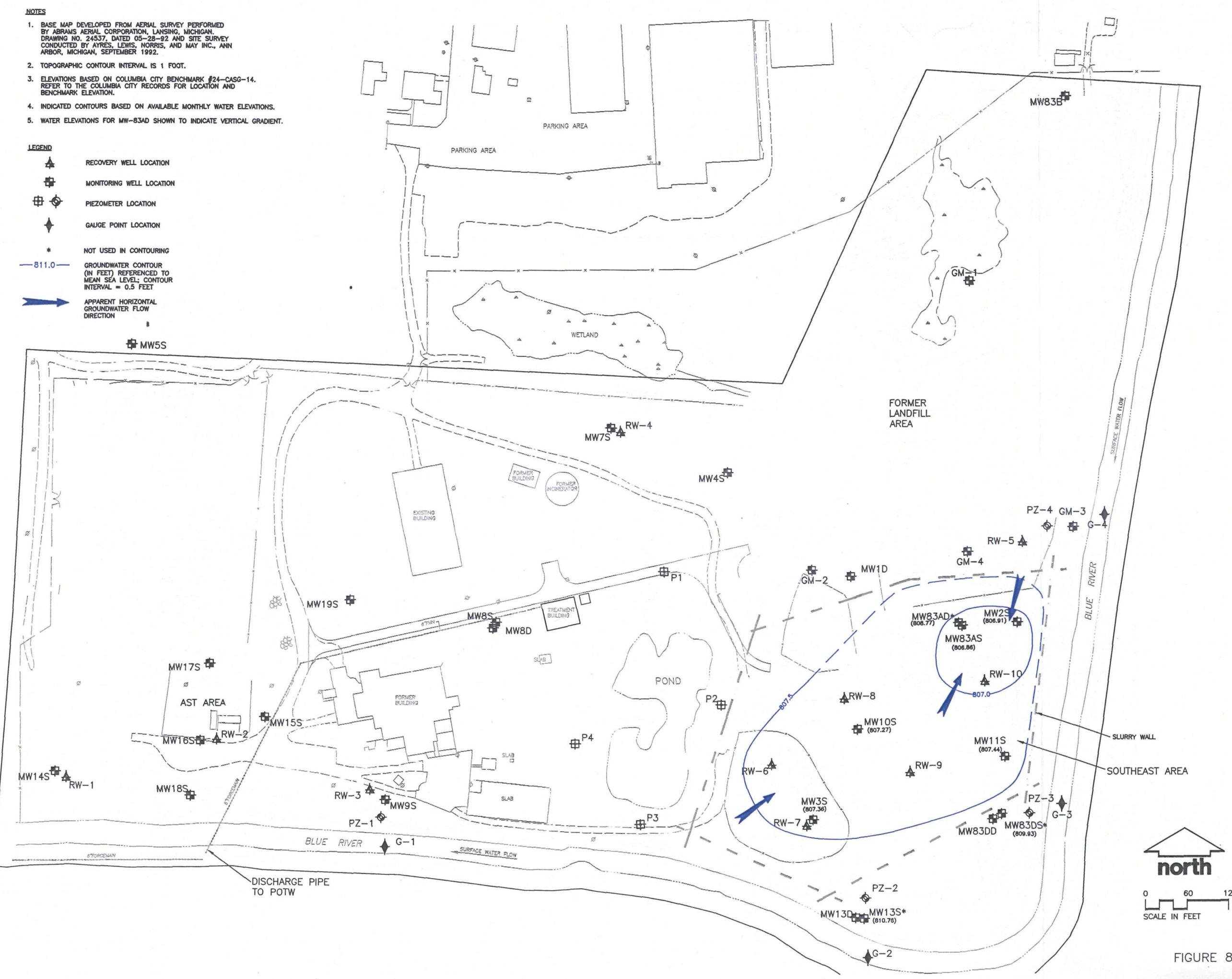


FIGURE 8-2



Reference	Issued By/Previous	Date	Approved By	Developed By	Drawn By
				TAY	DLF
				Approved by	Date
				Reference	
				Consultants	

**GROUNDWATER CONTOURS – SEPTEMBER 2005**  
SEMI-ANNUAL PROGRESS REPORT 21  
WAYNE RECLAMATION & RECYCLING, INC.  
COLUMBIA CITY, INDIANA

**Printed**  
Sheet Number  
3 of 7  
Drawing Number  
4050279  
0680702 D6

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SCALE IN FEET

**MWH**

FIGURE 8-3

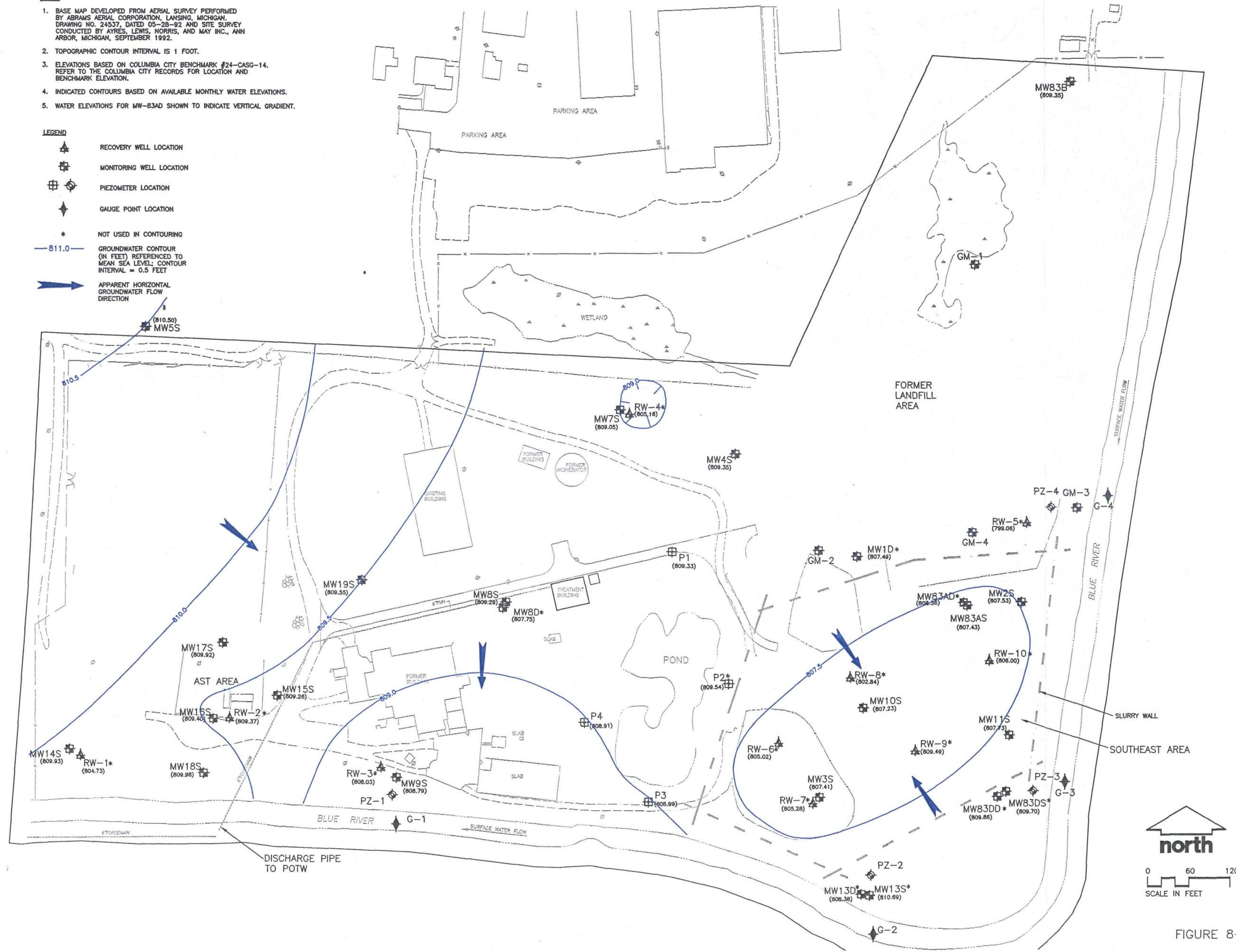
- NOTES**
1. BASE MAP DEVELOPED FROM AERIAL SURVEY PERFORMED BY ABAMS AERIAL CORPORATION, LANSING, MICHIGAN. DRAWING NO. 24537, DATED 05-28-92 AND SITE SURVEY CONDUCTED BY ATYES, LEWIS, NORRIS, AND MAY INC., ANN ARBOR, MICHIGAN, SEPTEMBER 1992.
  2. TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
  3. ELEVATIONS BASED ON COLUMBIA CITY BENCHMARK #24-CASG-14. REFER TO THE COLUMBIA CITY RECORDS FOR LOCATION AND BENCHMARK ELEVATION.
  4. INDICATED CONTOURS BASED ON AVAILABLE MONTHLY WATER ELEVATIONS.
  5. WATER ELEVATIONS FOR MW-83AD SHOWN TO INDICATE VERTICAL GRADIENT.

**LEGEND**

- ▲ RECOVERY WELL LOCATION
- MONITORING WELL LOCATION
- ◆ PIEZOMETER LOCATION
- ◆ GAUGE POINT LOCATION
- \* NOT USED IN CONTOURING

— 811.0 — GROUNDWATER CONTOUR (IN FEET) REFERENCED TO MEAN SEA LEVEL; CONTOUR INTERVAL = 0.5 FEET

APPARENT HORIZONTAL GROUNDWATER FLOW DIRECTION



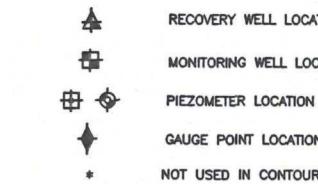
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Reference	Monitoring/Reference
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Approved By	
Date	
Printed	
Sheet Number	4 of 7
Drawing Number	4050279 0680702
Comments	D7

FIGURE 8-4

**NOTES**

1. BASE MAP DEVELOPED FROM AERIAL SURVEY PERFORMED BY ABRAMS AERIAL CORPORATION, LANSING, MICHIGAN DRAWING NO. 24537, DATED 05-28-92 AND SITE SURVEY CONDUCTED BY AYRES, LEWIS, NORRIS, AND MAY INC., ANN ARBOR, MICHIGAN, SEPTEMBER 1992.
2. TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
3. ELEVATIONS BASED ON COLUMBIA CITY BENCHMARK #24-CASG-14. REFER TO THE COLUMBIA CITY RECORDS FOR LOCATION AND BENCHMARK ELEVATION.
4. INDICATED CONTOURS BASED ON AVAILABLE MONTHLY WATER ELEVATIONS.
5. WATER ELEVATIONS FOR DEEP WELLS SHOWN TO INDICATE VERTICAL GRADIENT.
6. RED CONCENTRATIONS ARE GREATER THAN THE PRELIMINARY REMEDIATION GOAL.

**LEGEND**



— 809.0 APRIL 2005 GROUNDWATER CONTOUR (IN FEET) REFERENCED TO MEAN SEA LEVEL; CONTOUR INTERVAL = 0.5 FEET

→ APPARENT HORIZONTAL GROUNDWATER FLOW DIRECTION

VOLATILE ORGANIC COMPOUND (VOC) ABBREVIATIONS

CA - CHLOROETHANE	VC - VINYL CHLORIDE	PCE - TETRACHLOROETHENE
DCA - DICHLOROETHANE	TCA - TRICHLOROETHANE	VOCs - TOTAL VOLATILE ORGANIC COMPOUNDS
DCE - DICHLOROETHENE	TCE - TRICHLOROETHENE	J - ESTIMATED CONCENTRATION
DCP - DICHLOROPROPANE		ND - NOT DETECTED
µg/L - MICROGRAMS/LITER		

μg/L

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d:\j\cba\3568-Wayne RR\06-2004-07 OM&M5 - CADD\picont121\Fig 08-6 Cont 05.dwg Dec/27/05

**NOTE**

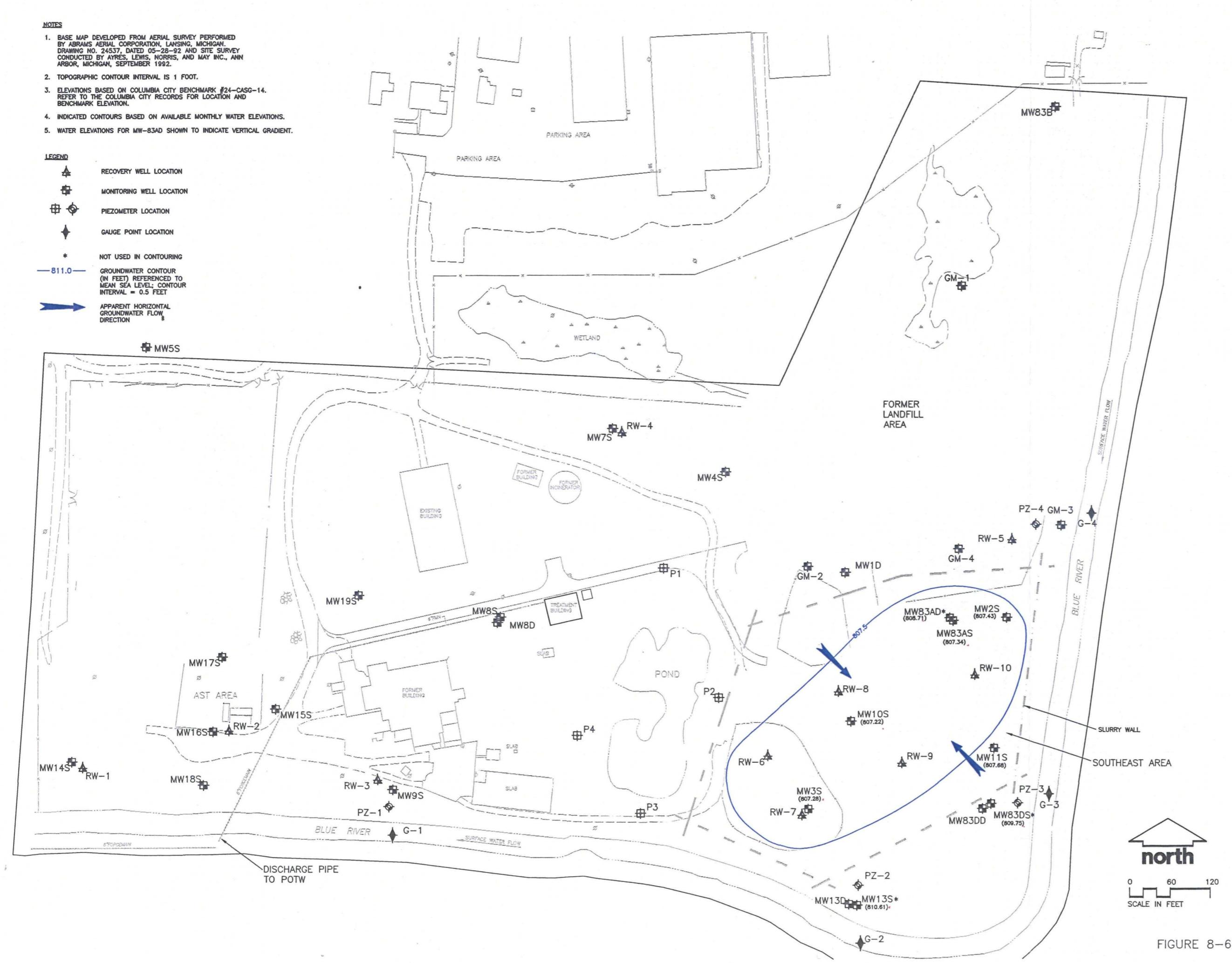
1. BASE MAP DEVELOPED FROM AERIAL SURVEY PERFORMED BY ABRAMS AERIAL CORPORATION, LANSING, MICHIGAN. DRAWING NO. 24537, DATED 05-28-92 AND SITE SURVEY CONDUCTED BY ATYES, LEWIS, NORRIS, AND MAY INC., ANN ARBOR, MICHIGAN, SEPTEMBER 1992.
  2. TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
  3. ELEVATIONS BASED ON COLUMBIA CITY BENCHMARK #24-CASG-14. REFER TO THE COLUMBIA CITY RECORDS FOR LOCATION AND BENCHMARK ELEVATION.
  4. INDICATED CONTOURS BASED ON AVAILABLE MONTHLY WATER ELEVATIONS.
  5. WATER ELEVATIONS FOR MW-83AD SHOWN TO INDICATE VERTICAL GRADIENT

LEGS

-  RECOVERY WELL LOCATION  
 MONITORING WELL LOCATION  
 PIEZOMETER LOCATION  
 GAUGE POINT LOCATION  
 NOT USED IN CONTOURING  


---

 — 811.0 —  
 GROUNDWATER CONTOUR  
 (IN FEET) REFERENCED TO  
 MEAN SEA LEVEL; CONTOUR  
 INTERVAL = 0.5 FEET  
  
 APPARENT HORIZONTAL  
 GROUNDWATER FLOW  
 DIRECTION 



Printed		Sheet Number 6 of 7		Drawing Number 4050279 0680702		D9	
GROUNDWATER CONTOURS - NOVEMBER 2005		SEMI-ANNUAL PROGRESS REPORT 21 WAYNE RECLAMATION & RECYCLING, INC. COLUMBIA CITY, INDIANA		Release#		Inspection/Review#none	
						Date	By Apprvd.
							Approved By
							Drawn By DLF
						Date	
						Reference	
						Comments	

FIGURE 8-6

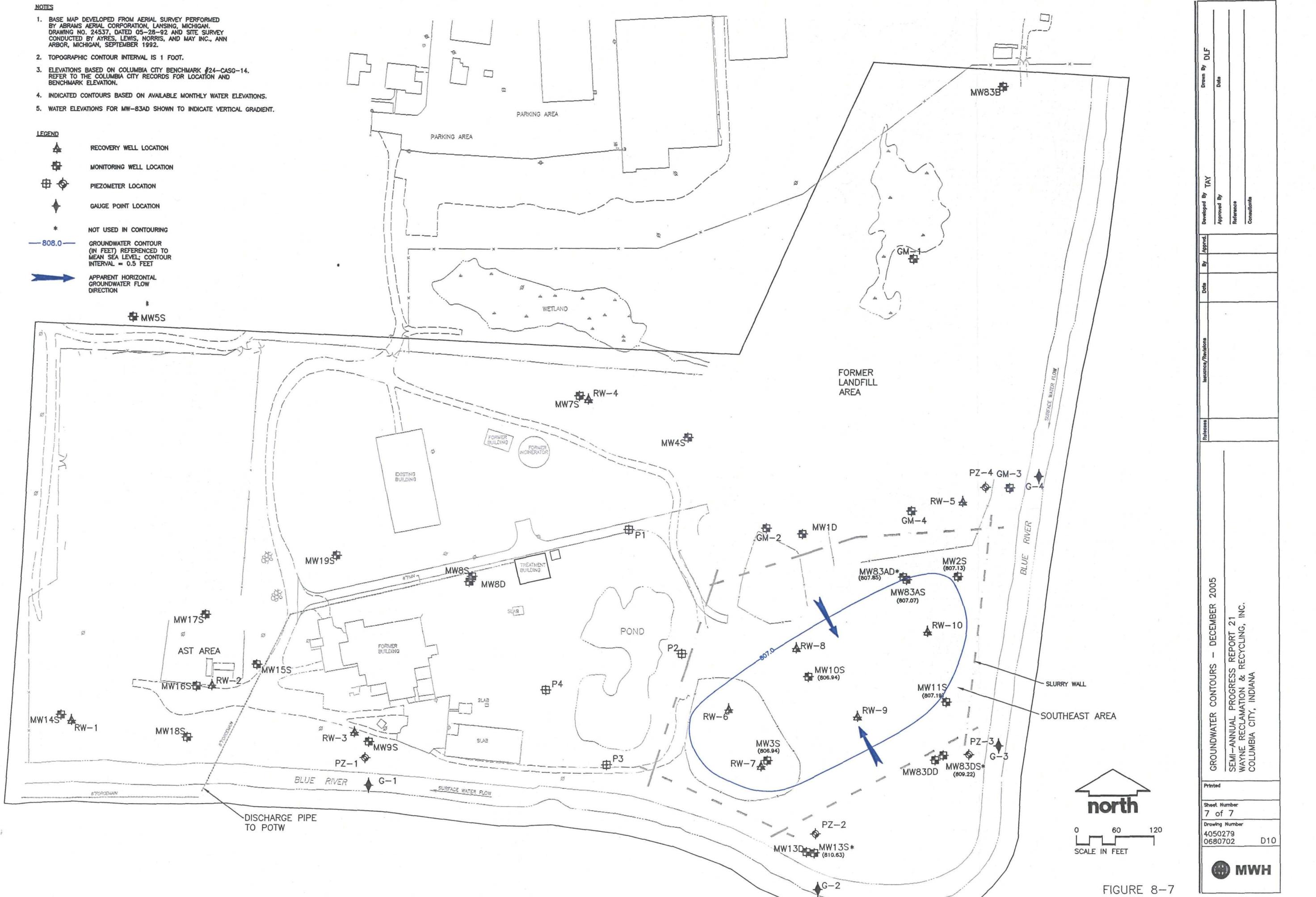


FIGURE 8-7

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## Appendix A

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**APPENDIX A**

**LANDFILL SAMPLING DATA, OCTOBER 2005 SAMPLING EVENT**



## BURGESS & NIPLE

Mr. Jeffrey P. Walker  
Outside Operations Manager  
City of Columbia City  
112 S. Chauncey Street  
Columbia City, IN 46725

Re: City of Columbia City  
Wayne Reclamation & Recycling Facility  
October 2005 Groundwater Sampling Event

December 20, 2005

**Burgess & Niple, Inc.**  
5085 Reed Road  
Columbus, OH 43220  
614 459.2050  
Fax 614 451.1385

Dear Mr. Walker:

Burgess & Niple, Inc. (B&N) has completed this report to provide you with additional information that is not included in the formal report submitted to the U.S. Environmental Protection Agency (EPA), as required by the facility's *Operation and Maintenance Sampling and Analysis Plan* (OMSAP) (Geraghty & Miller, Inc., October 1993). B&N completed groundwater sampling and analysis of four monitoring wells located at the Wayne Reclamation and Recycling Facility (WRRF) in the City of Columbia City, Indiana on October 14, 2005. The following sections summarize the results of the most recent sampling event. Figure 1 displays the groundwater monitoring network. Attachment 1 includes the field-sampling sheets and chain-of-custody form completed during the most recent sampling event. Attachment 2 contains the analytical laboratory report submitted by American Analytical Laboratories, Inc. (AAL). Time-versus-concentration plots generated from the groundwater quality data are presented in Attachment 3.

### METHODS

Groundwater elevations were measured at each well using an electronic water-level measuring tape. The depth to the bottom of each well was also measured. Measurements were made to the nearest 0.01 foot and recorded on field-sampling sheets. The well stick-up was measured to the nearest 0.1 foot and recorded.

Field-sampling personnel completed a wellhead inspection of each well documenting any evidence of activity near the well, the condition of the protective casing, any insect or rodent intrusions, or other notable conditions.

Disposable polyethylene bailers were used to purge each well of a minimum of five well volumes prior to sampling. Field parameters (pH, specific conductance, temperature, and turbidity) were measured and recorded during well purging. Sampling began once at least five well volumes were removed and the field parameters stabilized (within  $\pm 10$  percent). Purge water was disposed of on the ground away from each well, as specified by the facility's OMSAP.

Groundwater samples were collected from the four monitoring wells (GM-1, GM-2, GM-3, and GM-4). One duplicate was collected at GM-4 by splitting each bailer of water between two sets of sample containers. One field blank was collected to evaluate possible cross-contamination from the field-sampling equipment. Deionized water was poured into a disposable bailer and transferred into the sample containers. The laboratory prepared one

trip blank (two 40-milliliter [ml] vials of deionized water) and sent it along with the sample containers. Field personnel filled the sample containers and placed them in a cooler that was chilled with ice to 4 degrees Celsius ( $^{\circ}\text{C}$ ) or cooler. Groundwater samples were brought back to AAL for analysis.

AAL analyzed the groundwater samples from the four monitoring wells, the duplicate sample, and the equipment blank for ammonia (Method 350.1), chloride (Method CL-300), chemical oxygen demand (COD) (Method 410.4), and sodium (Method 6010A). Analysis of the volatile organic compounds (VOCs) (Method 8260B) was subcontracted by AAL to Zande Environmental Service, Inc. (Zande). The trip blank was analyzed for VOCs only.

## RESULTS

Table 1 includes all historical groundwater quality results reported for the WRRF, including the results of the October 14, 2005 groundwater sampling event. VOCs included in Table 1 are only those parameters historically detected at the facility. All other VOCs have been reported below the respective laboratory detection limits.

Most of the inorganic concentrations reported for GM-1, GM-2, GM-3, and GM-4 during the most recent groundwater sampling event were within the respective range of historical results. The lowest historical concentration for ammonia in GM-2 was reported during the October 2005 sampling event.

There were no VOCs reported above the laboratory detection limits in either GM-1 or GM-2 during the October 2005 sampling event. This is consistent with historical results for these two wells. All detected VOCs in GM-3 and GM-4 were within the respective range of historical concentrations.

Time-versus-concentration plots were constructed for ammonia, chloride, COD, sodium, and each of the historically detected VOCs. Historical results from each of the monitoring wells are included on each plot for comparative purposes. No increasing trends in inorganic constituents are evident. It appears that each of the detected VOCs in GM-3 and GM-4 have stabilized, or depict a decreasing trend in concentration, since 2000.

The following comments are made for wells GM-3 and GM-4 where organic compounds have been consistently detected:

- For well GM-3, concentrations of cis-1,2-dichloroethene (DCE) indicated an overall increasing trend from June 1997 (17 micrograms per liter [ $\mu\text{g/l}$ ]) to a maximum value of 150  $\mu\text{g/l}$  in October 2001. Since October 2001, concentrations have shown an overall decreasing trend, with latest concentrations reported at 55  $\mu\text{g/l}$ . The U.S. EPA primary maximum contamination level (MCL) for cis-1,2-DCE is 70  $\mu\text{g/l}$ .
- For well GM-3, concentrations of vinyl chloride have been reported above the MCL of 2  $\mu\text{g/l}$  for each sampling event since June 1995, with the exception of the January 1996 sampling event which reported a non-detect value of <1.0  $\mu\text{g/l}$ . The historical maximum concentration of 54  $\mu\text{g/l}$  was reported in October 2001. Since then, concentrations of vinyl chloride have indicated an overall decreasing trend with the latest concentration reported at 20  $\mu\text{g/l}$ .

December 20, 2005

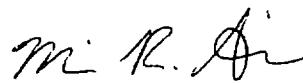
Page 3

- For well GM-4, concentrations of 1,1-dichloroethane (DCA) steadily increased from June 1996 (4.0 µg/l) to a high of 26 µg/l in April 2003, but appear to have stabilized since October 2001, with the latest concentrations reported at 21 µg/l in October 2005. There is no primary MCL established for 1,1-DCA.
- For well GM-4, concentrations of 1,1-DCE steadily increased from December 1997 (less than 0.5 µg/l) to a maximum value of 7.1 µg/l in October 2001. Since then, the last seven semiannual analytical results have all been lower. The primary MCL for 1,1-DCE is 7 µg/l.
- For well GM-4, concentrations of cis-1,2-DCE spiked to a high of 570 µg/l in June 2001. Since then, concentrations have shown a decreasing trend with latest results of 110 µg/l reported for April 2005 and October 2005. The primary MCL for cis-1,2-DCE is 70 µg/l.
- Previously, concentrations of 1,1,1-trichloroethane (TCA) were concluded as having an overall increasing trend from December 1999 (143 µg/l) to October 2002 (380 µg/l) for well GM-4. However, concentrations consistently decreased from October 2002 to October 2003. For the last four semiannual sampling events, concentrations have been reported at 180 µg/l in April 2004, October 2004, April 2005, and October 2005 which are lower than the MCL of 200 µg/l for 1,1,1-TCA.
- Previously, concentrations of trichloroethylene (TCE) were concluded as having a consistently increasing trend from June 2000 (440 µg/l) to October 2002 (1,300 µg/l). The two semiannual events completed in 2003 depicted decreasing concentrations (down to 400 µg/l in October 2003). However, TCE concentrations in GM-4 continue to indicate an increasing trend with the latest reported concentration of 830 µg/l in October 2005. The MCL is 5 µg/l for TCE.

Table 2 includes historical groundwater elevations and other well data recorded at the facility. Groundwater elevation data prior to December 1999 was not available. Groundwater elevations decreased between April 2005 and October 2005 from a minimum of 1.18 feet at GM-3 to a maximum of 2.38 feet at GM-2.

If you have any questions or comments, please do not hesitate to call.

Sincerely,



Michael R. Akins  
Project Geologist

JSD:cmc

Attachments

copy: Mr. Howard Lowen, Columbia City (w/att)

Mr. Bruce Hamilton, Indiana Dept. of Environmental Management (w/att)

Mr. Tom Tiefert, B&N (w/att)

Mr. Dan Forlastro, Engineering Management, Inc. (w/att)



SOURCE: BROWN SURVEYORS AND WARZYN ENGINEERING, INC.



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REPORT

VERIFICATION	REV. NO.	DATE	DESCRIPTION	BY	APPR.	POLARIS HELI CHASSIS POLARIS HELI CHASSIS-OPEN
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NOTARY PAPER LICENCE SHEET						
LICENCE SHEET						

**MONITORING WELL LOCATION MAP-**  
**POST-CLOSURE LANDFILL MONITORING**  
**WAYNE RECLAMATION AND RECYCLING SITE**  
**COLUMBIA CITY, INDIANA**

**FIGURE**

**Table 1**  
**Wayne Reclamation and Recycling Facility**  
**City of Columbia City**  
**Groundwater Monitoring Program**

Parameter	Units	MCL <sup>1</sup>	GM-1																					
			Jun-95	Jan-96	Jun-96	Jan-97	Jun-97	Dec-97	Jun-98	Jan-99	Jun-99	Dec-99	Jun-00	Dec-00	Jun-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04		
<b>Inorganics</b>																								
Ammonia	mg/l	—	0.43	0.6	0.58	0.25	0.41	0.28	1.7	0.587	0.45	0.48	1.08	1.20	1.41	1.09	1.14	1.24	0.96	0.94	1.04	0.83	0.59	0.83
Chloride	mg/l	250 (S)	130	120	80	48	39	35	80	64	31	37	26	23	46	39	44	31	31	37	51	51	43	43.6
Chemical Oxygen Demand (COD)	mg/l	--	130	55	87	100	39	25	38	74	22	36	27	45	13	29	52	37	<5	14	5	31	9	30
Sodium	mg/l	--	60	59	54	26	22	19	18	22.8	18	15	19.2	17.5	19.0	22.9	22.2	21.5	17.6	17.1	23.1	25.5	22.3	17.7
<b>Volatile Organic Compounds</b>																								
2-Butanone (Methyl ethyl ketone)	ug/l	--	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<10	<10	<10	<10	<10	<2	<10
1,1-Dichloroethane	ug/l	—	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<2	<1
1,1-Dichloroethene	ug/l	7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	ug/l	70	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<1.0	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	ug/l	100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1
1,2-Dichloropropane	ug/l	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<2	<1
1,1,1-Trichloroethane	ug/l	200	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<2	<1
1,1,2-Trichloroethane	ug/l	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	ug/l	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<2	<1
Vinyl Chloride	ug/l	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<1.0	<2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<2	<1
<b>Field Parameters</b>																								
pH	S.U.	6.5-8.5 (S)	--	—	—	—	—	—	—	—	—	—	6.90	7.58	6.94	7.49	7.55	7.11	7.17	7.40	6.72	6.91	7.24	7.14
Specific Conductance	umhos/cm	--	--	--	--	--	--	--	--	--	--	700	832	784	541	730	605	487	667	431	762	686	614	604
Temperature	oC	—	--	--	--	--	--	--	--	--	--	11.1	12.9	10.2	11.9	11.3	11.3	11.7	11.7	11.5	12.0	11.8	11.7	12.4
Turbidity	NTU	—	--	--	--	--	--	--	--	--	--	111	455	133	182	140	664	55	258	44	134	282	105	

All other VOCs have been historically below laboratory detection limits.

<sup>1</sup> = U.S. EPA Maximum Contaminant Level

(S) = Secondary U.S. EPA MCL

Duplicate samples collected at GM-4.

— = Not Applicable

**Table 1 (continued)**  
**Wayne Reclamation and Recycling Facility**  
**City of Columbia City**  
**Groundwater Monitoring Program**

Parameter	Units	MCL <sup>1</sup>	GM-2																					
			Jun-95	Jan-96	Jun-96	Jan-97	Jun-97	Dec-97	Jun-98	Jan-99	Jun-99	Dec-99	Jun-00	Dec-00	Jun-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	Apr-05	Oct-05
<b>Inorganics</b>																								
Ammonia	mg/l	—	2.6	2.6	2.4	1.6	3	2.6	3	2.64	1.7	1.8	1.99	1.80	2.03	2.10	1.46	1.43	1.35	1.30	1.28	1.18	1.13	1.09
Chloride	mg/l	250 (S)	18	15	19	16	16	22	19	10	7	12	16	10	12	14	20	14	15	50	11	11	15	20.1
Chemical Oxygen Demand (COD)	mg/l	—	30	<20	<20	<20	<20	<20	20	38	15	<15	17	8	<1	18	26	12	<5	<5	15	36	<5	28
Sodium	mg/l	—	20	15	17	16	13	19	10	11.2	10.1	12.3	12.1	10.5	11.3	14.4	14.4	12.2	12.0	12.2	10.1	9.12	10.2	10.0
<b>Volatile Organic Compounds</b>																								
2-Butanone (Methyl ethyl ketone)	ug/l	—	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<10	<10	<10	<10	<10	<2	<10
1,1-Dichloroethane	ug/l	—	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<2	<1
1,1-Dichloroethene	ug/l	7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	ug/l	70	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<1.0	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	ug/l	100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<2	<1
1,2-Dichloropropane	ug/l	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/l	200	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<2	<1
1,1,2-Trichloroethane	ug/l	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	ug/l	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<2	<1
Vinyl Chloride	ug/l	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<2	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<2	<1
<b>Field Parameters</b>																								
pH	S.U.	6.5-8.5 (S)	—	—	—	—	—	—	—	—	—	—	7.13	7.65	7.06	7.59	7.41	7.10	7.32	7.61	7.05	6.83	7.33	7.04
Specific Conductance	umhos/cm	—	—	—	—	—	—	—	—	—	—	700	818	715	524	936	804	586	826	458	723	667	776	744
Temperature	oC	—	—	—	—	—	—	—	—	—	—	11.3	12.9	10.6	11.4	10.2	10.6	11.5	12.1	12.7	12.0	12.3	11.9	12.3
Turbidity	NTU	—	—	—	—	—	—	—	—	—	—	—	9	13	22	10.5	7.44	16.0	13	10	12	11	11	16

All other VOCs have been historically below laboratory detection li

<sup>1</sup> = U.S. EPA Maximum Contaminant Level

(S) = Secondary U.S. EPA MCL

Duplicate samples collected at GM-4.

— = Not Applicable

**Table 1 (continued)**  
**Wayne Reclamation and Recycling Facility**  
**City of Columbia City**  
**Groundwater Monitoring Program**

Parameter	Units	MCL <sup>1</sup>	GM-3																					
			Jun-95	Jan-96	Jun-96	Jan-97	Jun-97	Dec-97	Jun-98	Jan-99	Jun-99	Dec-99	Jun-00	Dec-00	Jun-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	Apr-05	Oct-05
<b>Inorganics</b>																								
Ammonia	mg/l	—	6	4.9	3.2	0.98	1.4	1	1.4	1.15	0.6	0.8	0.59	0.79	0.52	0.62	0.51	0.76	0.52	0.55	0.45	0.50	0.42	0.46
Chloride	mg/l	250 (S)	23	14	25	32	20	40	25	42	24	20	29	44	22	28	24	32	67	27	42	21	24	51.7
Chemical Oxygen Demand (COD)	mg/l	—	120	80	38	33	<20	<20	25	24	22	<15	28	10	14	18	22	15	5	20	33	43	37	46
Sodium	mg/l	—	26	14	14	17	11	16	10	19.2	16.4	16.5	17.7	21.5	15.8	15.0	12.2	20.4	36.2	19.7	15.7	17.2	12.5	21.8
<b>Volatile Organic Compounds</b>																								
2-Butanone (Methyl ethyl ketone)	ug/l	—	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1-Dichloroethane	ug/l	—	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/l	7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	ug/l	70	84	33	26	17	17	36	94	51	85.6	60.7	110	82	61	150	85	100	52	72	59	17	57	55
trans-1,2-Dichloroethene	ug/l	100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.6	0.9	<0.5	<1.0	<5	<1.0	<1.0	1	<1.0	2	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/l	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/l	200	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/l	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	ug/l	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
Vinyl Chloride	ug/l	2	10	<1.0	18	42	33	45	32	22.6	22.3	16.6	26	28	24	54	33	41	19	40	27	31	17	20
<b>Field Parameters</b>																								
pH	S.U.	6.5-8.5 (S)	—	—	—	—	—	—	—	—	—	—	7.74	7.88	7.08	7.99	6.89	7.50	7.99	8.03	7.86	7.19	7.72	7.51
Specific Conductance	μmhos/cm	—	—	—	—	—	—	—	—	—	—	650	615	767	382	635	410	445	739	356	560	579	416	602
Temperature	oC	—	—	—	—	—	—	—	—	—	—	16.9	13.4	12	8.5	14.6	8.6	16.7	6.7	14.3	8.4	15.7	7.7	17.7
Turbidity	NTU	—	—	—	—	—	—	—	—	—	—	—	45	34	13	30.8	29.2	28.0	16	140	45	299	555	334

All other VOCs have been historically below laboratory detection li

<sup>1</sup> = U.S. EPA Maximum Contaminant Level

(S) = Secondary U.S. EPA MCL

Duplicate samples collected at GM-4.

— = Not Applicable

**Table 1 (continued)**  
**Wayne Reclamation and Recycling Facility**  
**City of Columbia City**  
**Groundwater Monitoring Program**

Parameter	Units	MCL <sup>1</sup>	GM-4																						
			Jun-95	Jan-96	Jun-96	Jan-97	Jun-97	Dec-97	Jun-98	Jan-99	Jun-99	Dec-99	Jun-00	Dec-00	Jun-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	Apr-05	Oct-05	
<b>Inorganics</b>																									
Ammonia	mg/l	—	0.37	0.33	0.34	0.28	0.13	0.37	3.1	0.697	0.29	0.24	0.32	0.46	0.36	0.33	0.29	0.25	0.31	0.23	0.22	0.19	0.30	0.35	
Chloride	mg/l	250 (S)	23	41	12	8.3	11	11	12	16	4.5	19	7	8	5	6	9	4	7	6	5	5	4	4.2	
Chemical Oxygen Demand (COD)	mg/l	—	220	65	47	55	20	<20	20	20	20	<15	13	2	6	28	13	8	<5	<5	10	22	<5	39	
Sodium	mg/l	—	31	41	22	25	18	26	25	40	21	12	17.6	27.8	14.6	15.1	10.2	11.6	11.0	7.86	8.98	8.43	7.86	16.0	
<b>Volatile Organic Compounds</b>																									
2-Butanone (Methyl ethyl ketone)	ug/l	—	<10	150	<10	<10	<10	<10	<10	<10	<10	<33.3	<50	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
1,1-Dichloroethane	ug/l	—	<1.0	<1.0	<1.0	10	12	13	11	16	14	13	19	18	21	25	17	20	26	20	15	14	14	21	
1,1-Dichloroethene	ug/l	7	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5	3.2	5.2	5	3.7	<5	4.2	7.0	7.1	6.0	5.1	6.2	4.9	3.8	6.1	<2	4.0	
cis-1,2-Dichloroethene	ug/l	70	130	140	190	260	250	320	250	323	243	250	190	270	570	250	230	180	190	98	110	100	110	110	
trans-1,2-Dichloroethene	ug/l	100	<1.0	<1.0	<1.0	12	14	16	13	16.3	13	14	13	14	18	20	14	14	15	11	8	8	6.9	11	
1,2-Dichloropropane	ug/l	5	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<3.3	<5.0	<5.0	6	<1.0	<1.0	<1.0	<1	4	<1	<1	<2	<1	
1,1,1-Trichloroethane	ug/l	200	180	<1.0	200	140	140	210	180	144	193	143	170	210	610	260	330	380	260	94	180	180	180	180	
1,1,2-Trichloroethane	ug/l	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<3.3	<5	<0.5	0.8	0.9	<0.5	0.8	0.8	0.7	0.6	<0.5	<2	<0.5	
Trichloroethene	ug/l	5	410	380	530	280	430	490	500	462	556	435	440	640	1,900	860	870	1,300	840	400	630	740	730	830	
Vinyl Chloride	ug/l	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.8	5.2	3.7	4.9	4	8	6	7	5	2	4	2	3	3	3.6	<1	
<b>Field Parameters</b>																									
pH	S.U.	6.5-8.5 (S)	—	—	—	—	—	—	—	—	—	—	7.34	7.02	6.99	7.51	7.23	7.23	7.35	7.70	7.29	6.92	7.45	7.10	
Specific Conductance	microsiemens/cm	—	—	—	—	—	—	—	—	—	—	—	690	964	1,141	553	880	660	471	729	413	732	619	618	827
Temperature	°C	—	—	—	—	—	—	—	—	—	—	—	15.2	12.9	11.9	10.8	12.1	9.9	13.1	11.1	12.4	10.8	13.3	11.3	13.7
Turbidity	NTU	—	—	—	—	—	—	—	—	—	—	—	13	21	29	22.9	17.4	37.0	25	51	30	56	67	118	

All other VOCs have been historically below laboratory detection li

<sup>1</sup> = U.S. EPA Maximum Contaminant Level

(S) = Secondary U.S. EPA MCL

Duplicate samples collected at GM-4.

— = Not Applicable

**Table 1 (continued)**  
**Wayne Reclamation and Recycling Facility**  
**City of Columbia City**  
**Groundwater Monitoring Program**

Parameter	Units	MCL <sup>1</sup>	Duplicate (GM-4)												
			Dec-99	Jun-00	Dec-00	Jun-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	Apr-05	
<b>Inorganics</b>															
Ammonia	mg/l	—	0.25	0.31	0.40	0.34	0.34	0.29	0.26	0.36	0.26	0.22	0.20	0.27	0.36
Chloride	mg/l	250 (S)	19	7	7	5	8	8	4	7	5	5	5	4	4.9
Chemical Oxygen Demand (COD)	mg/l	—	<15	24	4	8	22	16	11	<5	<5	10	26	7	26
Sodium	mg/l	—	12.8	21.5	28.1	14.0	15.8	10.5	7.32	11.1	7.80	8.76	8.67	7.86	16.9
<b>Volatile Organic Compounds</b>															
2-Butanone (Methyl ethyl ketone)	ug/l	—	<33.3	<50	<10	<10	<10	<10	<10	<10	<10	<10	<10	<2	<10
1,1-Dichloroethane	ug/l	—	15	19	19	21	24	18	27	28	20	14	14	15	20
1,1-Dichloroethene	ug/l	7	4.5	<5	4.4	6.2	6.9	6.6	5.1	6.2	5.0	3.7	6.1	2.0	3.7
cis-1,2-Dichloroethene	ug/l	70	246	190	290	540	180	280	260	210	110	110	110	100	110
trans-1,2-Dichloroethene	ug/l	100	13	13	14	17	20	15	15	15	11	8	8	7.7	10.0
1,2-Dichloropropane	ug/l	5	<3.3	<5.0	<5.0	6	<1.0	<1.0	<1.0	<1	<1	<1	<1	<2	<1
1,1,1-Trichloroethane	ug/l	200	143	170	230	580	180	410	410	270	99	170	190	170	180
1,1,2-Trichloroethane	ug/l	5	<3.3	<5	<0.5	0.8	0.9	<0.5	0.9	0.8	0.6	0.5	<0.5	<2.0	<0.5
Trichloroethylene	ug/l	5	434	440	650	1,300	610	840	1,400	820	440	620	780	710	860
Vinyl Chloride	ug/l	2	4.3	4	9	5	6	5	2	4	2	2	3	4.2	<1
<b>Field Parameters</b>															
pH	S.U.	6.5-8.5 (S)	—	7.34	7.02	6.99	7.51	7.23	7.23	7.35	7.70	7.29	6.92	7.45	7.10
Specific Conductance	umhos/cm	—	690	964	1,141	553	880	660	471	729	413	732	619	618	827
Temperature	oC	—	15.2	12.9	11.9	10.8	12.1	9.9	13.1	11.1	12.4	10.8	13.3	11.3	13.7
Turbidity	NTU	—	—	13	21	29	22.9	17.4	37.0	25	51	30	56	67	118

All other VOCs have been historically below laboratory detection li

<sup>1</sup> = U.S. EPA Maximum Contaminant Level

(S) = Secondary U.S. EPA MCL

Duplicate samples collected at GM-4.

— = Not Applicable

**Table I (continued)**  
**Wayne Reclamation and Recycling Facility**  
**City of Columbia City**  
**Groundwater Monitoring Program**

Parameter	Units	MCL <sup>1</sup>	Field Blank																					
			Jun-95	Jan-96	Jun-96	Jan-97	Jun-97	Dec-97	Jun-98	Jan-99	Jun-99	Dec-99	Jun-00	Dec-00	Jun-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	Apr-05	Oct-05
<b>Inorganics</b>																								
Ammonia	mg/l	--	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.22	<0.010	<0.010	0.54	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Chloride	mg/l	250 (S)	<1.0	<1.0	<1.0	<1.0	1.8	<1.0	<1.0	<1.0	19	<1	<1.0	<1.0	1	<1	1	2	<1	<1	<1	<1	<1	
Chemical Oxygen Demand (COD)	mg/l	--	<20	<20	<20	<20	<20	<20	115	33	<15	<15	4	<1.0	<1.0	3	<5	<5	<5	7	39	<5	<5	
Sodium	mg/l	--	<0.50	<0.50	<0.50	<0.50	14	<0.50	76	<0.20	<0.20	94.2	<0.10	0.28	0.33	0.20	0.403	0.18	0.442	0.10	<0.10	<0.10	<0.10	0.11
<b>Volatile Organic Compounds</b>																								
2-Butanone (Methyl ethyl ketone)	ug/l	--	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
1,1-Dichloroethane	ug/l	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	
1,1-Dichloroethene	ug/l	7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
cis-1,2-Dichloroethene	ug/l	70	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<1.0	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
trans-1,2-Dichloroethene	ug/l	100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	
1,2-Dichloropropane	ug/l	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	
1,1,1-Trichloroethane	ug/l	200	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	
1,1,2-Trichloroethane	ug/l	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Trichloroethene	ug/l	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	1	<1.0	<1.0	<1	<1	<1	<1	<1	
Vinyl Chloride	ug/l	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	
<b>Field Parameters</b>																								
pH	S.U.	6.5-8.5 (S)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Specific Conductance	umhos/cm	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Temperature	oC	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Turbidity	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

All other VOCs have been historically below laboratory detection li

<sup>1</sup> = U.S. EPA Maximum Contaminant Level

(S) = Secondary U.S. EPA MCL

Duplicate samples collected at GM-4.

-- = Not Applicable

**Table 1 (continued)**  
**Wayne Reclamation and Recycling Facility**  
**City of Columbia City**  
**Groundwater Monitoring Program**

Parameter	Units	MCL <sup>1</sup>	Trip Blank																					
			Jun-95	Jan-96	Jun-96	Jan-97	Jun-97	Dec-97	Jun-98	Jan-99	Jun-99	Dec-99	Jun-00	Dec-00	Jun-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	Apr-05	Oct-05
<b>Inorganics</b>																								
Ammonia	mg/l	-	<0.030	<0.030	<0.030	<0.030	-	-	<0.010	<0.010	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/l	250 (S)	<1.0	<1.0	<1.0	<1.0	-	-	<1.0	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand (COD)	mg/l	-	<20	<20	<20	<20	-	-	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	mg/l	--	<0.50	<0.50	<0.50	<0.50	-	-	<0.20	<0.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Volatile Organic Compounds</b>																								
2-Butanone (Methyl ethyl ketone)	ug/l	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1-Dichloroethane	ug/l	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/l	7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	ug/l	70	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<1.0	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	ug/l	100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/l	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/l	200	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/l	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	ug/l	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
Vinyl Chloride	ug/l	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1
<b>Field Parameters</b>																								
pH	S.U.	6.5-8.5 (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Specific Conductance	umhos/cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Temperature	oC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity	NTU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

All other VOCs have been historically below laboratory detection li

<sup>1</sup> = U.S. EPA Maximum Contaminant Level

(S) = Secondary U.S. EPA MCL

Duplicate samples collected at GM-4.

-- = Not Applicable

**Table 2**  
**City of Columbus City, Indiana**  
**Wayne Reclamation & recycling Facility**  
**Groundwater Elevations & Well Data**

Well No.	TOC Elevation (feet amsl)	Depth to Water (feet BTOC)											
		12/13/99	6/29/00	12/5/00	6/4/01	10/25/01	4/22/02	10/15/02	4/18/03	10/17/03	4/23/04	10/22/04	4/15/05
GM-1	841.03	31.26	30.19	31.61	30.31	29.54	29.24	31.64	31.51	30.22	30.68	31.07	29.84
GM-2	833.24	23.65	22.08	23.60	22.18	21.45	21.12	23.75	23.32	22.20	22.69	23.21	21.67
GM-3	822.86	11.74	10.69	12.45	11.73	8.46	10.51	12.40	12.08	11.16	11.95	12.37	11.79
GM-4	827.37	16.54	15.33	17.18	16.39	13.51	15.17	17.21	16.79	15.78	16.59	17.14	16.56
MW-4S	842.94	—	—	33.43	32.03	31.52	30.92	33.55	33.17	32.02	32.42	32.90	31.48
<hr/>													
Well No.	TOC Elevation (feet amsl)	Groundwater Elevation (feet amsl)											
		12/13/99	6/29/00	12/5/00	6/4/01	10/25/01	4/22/02	10/15/02	4/18/03	10/17/03	4/23/04	10/22/04	4/15/05
GM-1	841.03	809.77	810.84	809.42	810.72	811.49	811.79	809.39	809.52	810.81	810.35	809.96	811.19
GM-2	833.24	809.59	811.16	809.64	811.06	811.79	812.12	809.49	809.92	811.04	810.55	810.03	811.57
GM-3	822.86	811.12	812.17	810.41	811.13	814.40	812.35	810.46	810.78	811.70	810.91	810.49	811.07
GM-4	827.37	810.83	812.04	810.19	810.98	813.86	812.20	810.16	810.58	811.59	810.78	810.23	810.81
MW-4S	842.94	—	—	809.51	810.91	811.42	812.02	809.39	809.77	810.92	810.52	810.04	811.46
<hr/>													
Well No.	TOC Elevation (feet amsl)	Well Stick-Up (feet)											
		12/13/1999	6/29/2000	12/5/2000	6/4/2001	10/25/2001	4/22/2002	10/15/2002	4/18/2003	10/17/2003	4/23/2004	10/22/2004	4/15/2005
GM-1	841.03	2.1	—	1.9	1.9	2.1	1.8	2.1	1.8	1.8	1.8	2.0	2.0
GM-2	833.24	2.5	—	2.2	2.2	2.5	2.2	2.5	2.2	2.2	2.3	2.4	2.5
GM-3	822.86	2.2	—	2.0	2.0	2.3	1.9	2.3	1.9	2.0	2.0	2.2	2.2
GM-4	827.37	3.3	—	2.6	2.6	3.0	2.5	3.0	2.6	2.7	2.6	2.9	2.9
MW-4S	842.94	—	—	—	—	3.0	2.6	—	—	—	1.5	2.8	2.7
<hr/>													
Well No.	TOC Elevation (feet amsl)	Depth-to-Bottom (feet BTOC)											
		12/13/1999	6/29/2000	12/5/2000	6/4/2001	10/25/2001	4/22/2002	10/15/2002	4/18/2003	10/17/2003	4/23/2004	10/22/2004	4/15/2005
GM-1	841.03	35.10	34.84	34.84	34.84	34.86	34.81	34.81	34.91	35.05	34.96	34.97	34.97
GM-2	833.24	39.08	38.87	38.86	38.86	38.88	38.83	38.83	38.80	38.85	38.82	38.82	38.85
GM-3	822.86	27.95	27.72	27.75	27.75	27.74	27.71	27.71	27.68	27.72	27.68	27.68	27.68
GM-4	827.37	28.17	27.93	27.95	27.95	27.95	27.91	27.91	27.89	27.92	27.90	27.90	27.90
MW-4S	842.94	—	—	39.74	39.74	40.93	40.83	—	—	—	40.85	40.85	40.85

Data prior to 12/99 unavailable.

TOC = Top of casing elevation reported by Geraghty & Miller SAP.

amsl = above mean sea level.

BTOC = below top of casing.

**ATTACHMENT 1**

**FIEL D-SAMPLING SHEETS  
AND  
CHAIN-OF-CUSTODY FORM**

**GROUNDWATER MONITORING WELL RECORD FORM**  
**SITE LOCATION: WAYNE RECLAMATION & RECYCLING FACILITY -**  
**CITY OF COLUMBIA CITY, IN**

WELL NO.: GM-1 DATE: 10-14-05 PROJECT NO.: 40568  
FIELD BOOK NO.: N/A WEATHER: sunny to partly cloudy cool lots  
SAMPLING CREW: Botley

**WELLHEAD INSPECTION:**

Evidence of Activities at Well: No  Yes  Comment: \_\_\_\_\_  
Well Protector Condition: Good  Poor  Comment: \_\_\_\_\_  
Insect/Rodent Intrusion: No  Yes  Comment: \_\_\_\_\_  
Other: N/A

**FIELD EQUIPMENT USED:**

Water Level Indicator:	Solinst <input checked="" type="checkbox"/>	Soiltest <input type="checkbox"/>	Plopper <input type="checkbox"/>	Date Calibrated:	
pH Meter:	Hanna <input type="checkbox"/>	Orion <input type="checkbox"/>	Oakton <input checked="" type="checkbox"/>		<u>10-14-05</u>
Conductivity Meter:	YSI <input type="checkbox"/>	Oakton <input checked="" type="checkbox"/>	Myron L <input type="checkbox"/>		
Thermometer:	YSI <input type="checkbox"/>	Hanna <input type="checkbox"/>	Oakton <input checked="" type="checkbox"/>		
Turbidity:	Hach <input checked="" type="checkbox"/>	HF Scientific <input type="checkbox"/>			
Dissolved Oxygen:	Corning No. 1 <input type="checkbox"/>	Corning No. 2 <input type="checkbox"/>			
Other:	<u>GW</u> <u>N/A</u>				

**STATIC WATER LEVEL:**

Reference Point (RP) Elevation:	Top Casing <input checked="" type="checkbox"/>	Top Protector <input type="checkbox"/>	Well Stick-up <input type="checkbox"/>	
Measured Level:	1st <input type="checkbox"/>	2nd <input type="checkbox"/>	3rd <input type="checkbox"/>	Average <input type="checkbox"/>
Time/Depth:	<u>1039AM</u> <u>31.70</u>	<u>1039AM</u> <u>31.70</u>	<u>1039AM</u> <u>31.70</u>	<u>31.70</u>
Well Bottom: Measured Distance from RP:	<u>35.00</u>	<u>1.0V = .5379</u>	<u>5.0V = 2.6895</u>	

**PURGING:**

Purging Device: Dedicated Pump  Disposable Bailer   
Grundfos Pump  Bladder Pump  Other   
Time Elapsed During Purging (mins.): 14 Total Gallons Removed During Purging: 5.0 Gallons

MEASUREMENTS	TIME (IN MINUTES)					
	1045AM	1048AM	1050AM	1054AM	1057AM	1059AM
Amount of Water Removed (mls.)	1	1.0	2.0	3.0	4.0	5.0
pH (S.U.)	6.85	7.04	7.06	7.09	7.13	7.14
Conductivity (umhos/cm)	643	601	619	609	603	604
Temperature (°C)	13.1	12.4	12.4	12.4	12.4	12.4
Turbidity (NTU)	432	192	118	105	94	105
TDS (ppm)	323	301	310	304	302	302
Dissolved Oxygen (mg/l)	-	-	-	-	-	-

**SAMPLING:**

Sampling Device: Dedicated Pump  Disposable Bailer   
Grundfos Pump  Bladder Pump  Other   
Time Sampling Began: 1100AM Time Completed: 1110AM  
Characteristics of Water: Odor N/A Color clear w/ slight orange/tint  
Turbidity cloudy Other N/A  
QA/QC Sample Collected: Duplicate  Replicate  Matrix Spike/Matrix Spike Duplicate  None

**REMARKS:**

Calibration: PH 4.01 = 4.05 7.01 = 7.03  
Cont. 1413 = 1449

## GROUNDWATER MONITORING WELL RECORD FORM

SITE LOCATION: WAYNE RECLAMATION &amp; RECYCLING FACILITY -

CITY OF COLUMBIA CITY, IN

WELL NO.: GM-2 DATE: 10-14-05 PROJECT NO.: 40568

FIELD BOOK NO.: N/A WEATHER: Partly Cloudy Little Sun Cool 65°

SAMPLING CREW: Botley

WELLHEAD INSPECTION:Evidence of Activities at Well: No  Yes  Comment: \_\_\_\_\_Well Protector Condition: Good  Poor  Comment: \_\_\_\_\_Insect/Rodent Intrusion: No  Yes  Comment: \_\_\_\_\_

Other: N/A

FIELD EQUIPMENT USED:

Date Calibrated:

Water Level Indicator: Solinst  Soiltest  Plopper 

10-14-05

pH Meter: Hanna  Orion  Oakton Conductivity Meter: YSI  Oakton  Myron L Thermometer: YSI  Hanna  Oakton Turbidity: Hach  HF Scientific Dissolved Oxygen: Corning No. 1  Corning No. 2 

Other: (None) N/A

STATIC WATER LEVEL:Reference Point (RP) Elevation: Top Casing  Top Protector  Well Stick-up 

Measured Level: 1st 2nd 3rd Well Stick-up Average

Time/Depth: 1114AM/24.05 1114AM/24.05 1114AM/24.05 24.05

Well Bottom: Measured Distance from RP: 30.65 LWV = 2.4124 SWV = 12.062

PURGING:Purging Device: Dedicated Pump  Dedicated Pump  Disposable Bailer Grundfos Pump  Bladder Pump  Other 

Time Elapsed During Purging (mins.): 22 Total Gallons Removed During Purging: 13.0 Gallons

MEASUREMENTS	TIME (IN MINUTES)						
	1121AM	1124AM	1128AM	1132AM	1135AM	1138AM	1143AM
Amount of Water Removed (mls.)	1	2.0	4.0	6.0	8.0	10.0	13.0
pH (S.U.)	6.97	7.02	7.02	7.03	7.04	7.04	7.04
Conductivity (umhos/cm)	716	720	737	746	746	749	744
Temperature (°C)	12.9	12.4	12.3	12.3	12.3	12.2	12.3
Turbidity (NTU)	386	573	134	41	24	20	16
TDS (ppm)	360	360	370	373	373	376	372
Dissolved Oxygen (mg/l)	-	-	-	-	-	-	-

SAMPLING:Sampling Device: Dedicated Pump  Dedicated Pump  Disposable Bailer Grundfos Pump  Bladder Pump  Other 

Time Sampling Began: 1145AM Time Completed: 1155AM

Characteristics of Water: Odor N/A Color Clear

Turbidity Clear Other N/A

QA/QC Sample Collected: Duplicate  Replicate  Matrix Spike/Matrix Spike Duplicate  None REMARKS:

\*First 4-5 Gallons salty orangish/Brown then cleared!

**GROUNDWATER MONITORING WELL RECORD FORM**  
**SITE LOCATION: WAYNE RECLAMATION & RECYCLING FACILITY -**  
**CITY OF COLUMBIA CITY, IN**

WELL NO.: GM-3 DATE: 10-14-05 PROJECT NO.: 40568

FIELD BOOK NO.: N/A WEATHER: Partly cloudy little sun warmer 70°

SAMPLING CREW: Botley

**WELLHEAD INSPECTION:**

Evidence of Activities at Well: No ✓ Yes \_\_\_\_\_ Comment: \_\_\_\_\_

Well Protector Condition: Good ✓ Poor \_\_\_\_\_ Comment: \_\_\_\_\_

Insect/Rodent Intrusion: No ✓ Yes \_\_\_\_\_ Comment: \_\_\_\_\_

Other: N/A

**FIELD EQUIPMENT USED:**

Date Calibrated:

Water Level Indicator: Solinst ✓ Soiltest \_\_\_\_\_ Plopper \_\_\_\_\_

pH Meter: Hanna \_\_\_\_\_ Orion \_\_\_\_\_ Oakton ✓

Conductivity Meter: YSI \_\_\_\_\_ Oakton ✓ Myron L \_\_\_\_\_

Thermometer: YSI \_\_\_\_\_ Hanna \_\_\_\_\_ Oakton ✓

Turbidity: Hach ✓ HF Scientific \_\_\_\_\_

Dissolved Oxygen: Coming No. 1 \_\_\_\_\_ Coming No. 2 \_\_\_\_\_

Other: N/A

**STATIC WATER LEVEL:**

Reference Point (RP) Elevation: Top Casing ✓ Top Protector \_\_\_\_\_ Well Stick-up \_\_\_\_\_

Measured Level: 1st 2nd 3rd Average

Time/Depth: 1250PM / 12.97 1250PM / 12.97 1250PM / 12.97 12.97

Well Bottom: Measured Distance from RP: 27.68 14.773 SWD = 11.98865

**PURGING:**

Purging Device: Dedicated Pump \_\_\_\_\_ Dedicated Pump ✓ Disposable Bailer ✓

Grundfos Pump \_\_\_\_\_ Bladder Pump \_\_\_\_\_ Other \_\_\_\_\_

Time Elapsed During Purging (mins.): 21 Total Gallons Removed During Purging: 12.0 Gallons

MEASUREMENTS	TIME (IN MINUTES)						
	1256PM	1259PM	103PM	106PM	110PM	114PM	117PM
Amount of Water Removed (mls.)	1	2.0	4.0	6.0	8.0	10.0	12.0
pH (S.U.)	7.70	7.50	7.49	7.48	7.51	7.50	7.51
Conductivity (umhos/cm)	436	553	604	610	601	602	602
Temperature (°C)	19.7	18.0	17.6	17.6	17.7	17.7	17.7
Turbidity (NTU)	41	330	481	447	343	310	334
TDS (ppm)	218	276	303	305	302	301	301
Dissolved Oxygen (mg/l)	-	-	-	-	-	-	-

**SAMPLING:**

Sampling Device: Dedicated Pump \_\_\_\_\_ Dedicated Pump ✓ Disposable Bailer ✓

Grundfos Pump \_\_\_\_\_ Bladder Pump \_\_\_\_\_ Other \_\_\_\_\_

Time Sampling Began: 120PM Time Completed: 130AM

Characteristics of Water: Odor N/A Color Brown

Turbidity Slightly Silty Other N/A

QA/QC Sample Collected: Duplicate \_\_\_\_\_ Replicate \_\_\_\_\_ Matrix Spike/Matrix Spike Duplicate \_\_\_\_\_ None ✓

**REMARKS:**

\* Equipment Blank Taken at 1245PM before Purging & Sampling at this well!

linc  
at  
Well!

# GROUNDWATER MONITORING WELL RECORD FORM

SITE LOCATION: WAYNE RECLAMATION & RECYCLING FACILITY -

CITY OF COLUMBIA CITY, IN

WELL NO.: GM-4 DATE: 10-14-05 PROJECT NO.: 40568

FIELD BOOK NO.: N/A WEATHER: very cloudy little Sun cool 65-70°

SAMPLING CREW: Botley

## WELLHEAD INSPECTION:

Evidence of Activities at Well: No  Yes  Comment: \_\_\_\_\_

Well Protector Condition: Good  Poor  Comment: \_\_\_\_\_

Insect/Rodent Intrusion: No  Yes  Comment: \_\_\_\_\_

Other: N/A

## FIELD EQUIPMENT USED:

Date Calibrated:

Water Level Indicator: Solinst  Soiltest  Plopper

10-14-05

pH Meter: Hanna  Orion  Oakton

Conductivity Meter: YSI  Oakton  Myron L

Thermometer: YSI  Hanna  Oakton

Turbidity: Hach  HF Scientific

Dissolved Oxygen: Corning No. 1  Corning No. 2

Other: N/A

## STATIC WATER LEVEL:

Reference Point (RP) Elevation: Top Casing  Top Protector  Well Stick-up

Measured Level: 1st 2nd 3rd Average

Time/Depth: 1155AM 17.99 1155AM 17.99 1155AM 17.99 17.99

Well Bottom: Measured Distance from RP: 27.90 SWV: 1.61533 SWV: 8.07665

## PURGING:

Purging Device: Dedicated Pump  Dedicated Pump  Disposable Bailer

Grundfos Pump  Bladder Pump  Other

Time Elapsed During Purging (mins.): 17 Total Gallons Removed During Purging: 9.0 Gallons

MEASUREMENTS	TIME (IN MINUTES)					
	1201PM	1204PM	1207PM	1210PM	1214PM	1218PM
Amount of Water Removed (mls.)	1	1.0	3.0	5.0	7.0	9.0
pH (S.U.)	7.29	7.11	7.08	7.07	7.09	7.10
Conductivity (umhos/cm)	560	754	820	824	829	827
Temperature (°C)	15.1	14.4	13.8	13.7	13.7	13.7
Turbidity (NTU)	46	116	132	143	130	118
TDS (ppm)	281	378	411	413	414	413
Dissolved Oxygen (mg/l)	-	-	-	-	-	-

## SAMPLING:

Sampling Device: Dedicated Pump  Dedicated Pump  Disposable Bailer

Grundfos Pump  Bladder Pump  Other

Time Sampling Began: 1220PM Time Completed: 1230PM

Characteristics of Water: Odor N/A Color Brown

Turbidity Slightly Salty Other N/A

QA/QC Sample Collected Duplicate  Replicate  Matrix Spike/Matrix Spike Duplicate  None

## REMARKS:

**SU...SS...IP...NV...NR...IA...BE...TO...**  
**CHAIN-OF-CUSTODY RECORD**

**Relinquished by:** \_\_\_\_\_ **Date** \_\_\_\_\_ **Time** \_\_\_\_\_ **Received by:** \_\_\_\_\_ **Date** \_\_\_\_\_ **Time** \_\_\_\_\_ **Remarks** \_\_\_\_\_

Relinquished by: Stephen C. Battley 2. Date 10/14/05 Time 5:10 PM Received for Lab by: R. Pack Date 10/14/05 Time 1710

BURGESS & NIPLE, LIMITED  
ENVIRONMENTAL LABORATORY

5085 REED ROAD, COLUMBUS, OH 43220  
TELEPHONE: (614)459-2050  
FAX: (614)459-5398

METHOD OF SHIPMENT

Hand Delivered to Lab

**ATTACHMENT 2**  
**LABORATORY REPORT**

**AMERICAN ANALYTICAL LABORATORIES, INC.****- CERTIFICATE OF ANALYSIS -**

ANALYTICAL SCIENCES • COLUMBUS OPERATIONS

Columbia City-Wayne Reclamation  
5085 Reed Road  
Columbus, Ohio 43220

**Report Date:** 25-Oct-05**Attn:** BN - Mike Akins**American Analytical Lab #:** 05-10971**Sample ID:** GM-1**Date Submitted to Lab:** 10/14/05**Date Logged-In:** 10/14/05**Client Project #:** 40568**Matrix:** G/Water**- SAMPLE COLLECTION INFORMATION -****Date:** 10/14/05**Time** 11:00 AM**By:** Botley

Test Group	EPA Method	Test	Calc. PQL	Final Result	Units	Analysis Date	Analyst	WS#
NH3A	350.1	Ammonia	0.05	0.83	mg/l	10/19/05	JRW	47022
CL-300	300.0	Chloride	1.0	43.6	mg/l	10/18/05	JAO	47048
COD	410.4	Chemical Oxygen Demand	5	30	mg/l	10/18/05	SDK	46990
IACP	6010A	Sodium	10.00	17.7	mg/l	10/24/05	CIU	47079
8260-COLU	8260B	Acetone	100	< 100	ug/l	10/19/05	IR	47091
	8260B	Acrylonitrile	50	< 50	ug/l	10/19/05	IR	47091
	8260B	Benzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromochloromethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromodichloromethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromoform	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromomethane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Carbon disulfide	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Carbon tetrachloride	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Chlorobenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Chloroethane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Chloroform	5	< 5	ug/l	10/19/05	IR	47091

Ohio Lab Approval # 4032 - Ohio VAP Certificate # CL0042 - US EPA Lab # OH0020

Lab Number 05-10971: Page 1

**AMERICAN ANALYTICAL LABORATORIES, INC.****- CERTIFICATE OF ANALYSIS -**

ANALYTICAL SCIENCES • COLUMBUS OPERATIONS

*Lab Number 05-10971 -Continued from Previous Page***Test Group**

	EPA Method	Test	Calc. PQL	Final Result	Units	Analysis Date	Analyst	WS#
8260-COLU	8260B	Chloromethane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	1,2-Dibromo-3-chloropropane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Dibromochloromethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,2-Dibromoethane (EDB)	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Dibromomethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,2-Dichlorobenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,4-Dichlorobenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Trans-1,4-Dichloro-2-Butene	10	< 10	ug/l	10/19/05	IR	47091
	8260B	1,1-Dichloroethane	1	< 1	ug/l	10/19/05	IR	47091
	8260B	1,2-Dichloroethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,1-Dichloroethene	0.5	< 0.5	ug/l	10/19/05	IR	47091
	8260B	cis-1,2-Dichloroethene	0.5	< 0.5	ug/l	10/19/05	IR	47091
	8260B	trans-1,2-Dichloroethene	1	< 1	ug/l	10/19/05	IR	47091
	8260B	1,2-Dichloropropane	1	< 1	ug/l	10/19/05	IR	47091
	8260B	cis-1,3-Dichloropropene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	trans-1,3-Dichloropropene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Ethylbenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	2-Hexanone	50	< 50	ug/l	10/19/05	IR	47091
	8260B	Methyl ethyl ketone	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Methyl Iodide	10	< 10	ug/l	10/19/05	IR	47091
	8260B	4-Methyl-2-pentanone (MIBK)	50	< 50	ug/l	10/19/05	IR	47091
	8260B	Methylene chloride	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Styrene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,1,1,2-Tetrachloroethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,1,2,2-Tetrachloroethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Tetrachloroethene	5	< 5	ug/l	10/19/05	IR	47091

Ohio Lab Approval # 4032 - Ohio VAP Certificate # CL0042 - US EPA Lab # OH0020

Lab Number 05-10971: Page 2

**AMERICAN ANALYTICAL LABORATORIES, INC.****- CERTIFICATE OF ANALYSIS -**

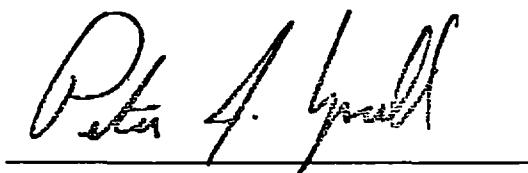
ANALYTICAL SCIENCES • COLUMBUS OPERATIONS

*Lab Number 05-10971 -Continued from Previous Page***Test Group**

	EPA Method	Test	Calc. PQL	Final Result	Units	Analysis Date	Analyst	WS#
260-COLU	8260B	Toluene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,1,1-Trichloroethane	1	< 1	ug/l	10/19/05	IR	47091
	8260B	1,1,2-Trichloroethane	0.5	< 0.5	ug/l	10/19/05	IR	47091
	8260B	Trichloroethene	1	< 1	ug/l	10/19/05	IR	47091
	8260B	Trichlorofluoromethane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	1,2,3-Trichloroproppane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Vinyl acetate	50	< 50	ug/l	10/19/05	IR	47091
	8260B	Vinyl chloride	1	< 1	ug/l	10/19/05	IR	47091
	8260B	Xylene, Total	5	< 5	ug/l	10/19/05	IR	47091
EMP		Temperature		12.4	C	10/14/05	SCB	46935
PHEFIELD		pH	1.00	7.14	S.U.	10/14/05	SCB	46935
ONDFIELD		Conductivity		1	mhos/cm	10/14/05	SCB	46935
TURBFIELD		Turbidity	0.00	105	NTU	10/14/05	SCB	46935

*End of Report*

Report Approved By:

  
Peter J. Youll

Laboratory Director

Ohio Lab Approval # 4032 - Ohio VAP Certificate # CL0042 - US EPA Lab # OH0020

Lab Number 05-10971: Page 3

**AMERICAN ANALYTICAL LABORATORIES, INC.****- CERTIFICATE OF ANALYSIS -**

ANALYTICAL SCIENCES • COLUMBUS OPERATIONS

Columbia City-Wayne Reclamation  
5085 Reed Road  
Columbus, Ohio 43220

Report Date: 25-Oct-05

Attn: BN - Mike Akins

American Analytical Lab #: 05-10972

Sample ID: GM-2

Date Submitted to Lab: 10/14/05

Date Logged-In: 10/14/05

Client Project #: 40568

Matrix: G/Water

**- SAMPLE COLLECTION INFORMATION -**

Date: 10/14/05

Time 11:45 AM

By: Botley

Test Group	EPA Method	Test	Calc. PQL	Final Result	Units	Analysis Date	Analyst	WS#
NH3A	350.1	Ammonia	0.05	1.09	mg/l	10/19/05	JRW	47022
CL-300	300.0	Chloride	1.0	20.1	mg/l	10/18/05	JAO	47048
COD	410.4	Chemical Oxygen Demand	5	28	mg/l	10/18/05	SDK	46990
IAICP	6010A	Sodium	5.0	10.0	mg/l	10/24/05	CTU	47079
8260-COLU	8260B	Acetone	100	< 100	ug/l	10/19/05	IR	47091
	8260B	Acrylonitrile	50	< 50	ug/l	10/19/05	IR	47091
	8260B	Benzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromochloromethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromodichloromethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromoform	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromomethane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Carbon disulfide	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Carbon tetrachloride	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Chlorobenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Chloroethane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Chloroform	5	< 5	ug/l	10/19/05	IR	47091

Ohio Lab Approval # 4032 - Ohio VAP Certificate # CL0042 - US EPA Lab # OH0020

Lab Number 05-10972: Page 1

**AMERICAN ANALYTICAL LABORATORIES, INC.****- CERTIFICATE OF ANALYSIS -**

ANALYTICAL SCIENCES • COLUMBUS OPERATIONS

*Lab Number 05-10972 -Continued from Previous Page***Test Group**

	EPA Method	Test	Calc. PQL	Final Result	Units	Analysis Date	Analyst	WS#
8260-COLU	8260B	Chloromethane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	1,2-Dibromo-3-chloropropane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Dibromochloromethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,2-Dibromoethane (EDB)	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Dibromomethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,2-Dichlorobenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,4-Dichlorobenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Trans-1,4-Dichloro-2-Butene	10	< 10	ug/l	10/19/05	IR	47091
	8260B	1,1-Dichloroethane	1	< 1	ug/l	10/19/05	IR	47091
	8260B	1,2-Dichloroethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,1-Dichloroethene	0.5	< 0.5	ug/l	10/19/05	IR	47091
	8260B	cis-1,2-Dichloroethene	0.5	< 0.5	ug/l	10/19/05	IR	47091
	8260B	trans-1,2-Dichloroethene	1	< 1	ug/l	10/19/05	IR	47091
	8260B	1,2-Dichloropropane	1	< 1	ug/l	10/19/05	IR	47091
	8260B	cis-1,3-Dichloropropene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	trans-1,3-Dichloropropene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Ethylbenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	2-Hexanone	50	< 50	ug/l	10/19/05	IR	47091
	8260B	Methyl ethyl ketone	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Methyl Iodide	10	< 10	ug/l	10/19/05	IR	47091
	8260B	4-Methyl-2-pentanone (MIBK)	50	< 50	ug/l	10/19/05	IR	47091
	8260B	Methylene chloride	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Styrene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,1,1,2-Tetrachloroethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,1,2,2-Tetrachloroethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Tetrachloroethene	5	< 5	ug/l	10/19/05	IR	47091

Ohio Lab Approval # 4032 - Ohio VAP Certificate # CL0042 - US EPA Lab # OH0020

Lab Number 05-10972: Page 2

**AMERICAN ANALYTICAL LABORATORIES, INC.****- CERTIFICATE OF ANALYSIS -**

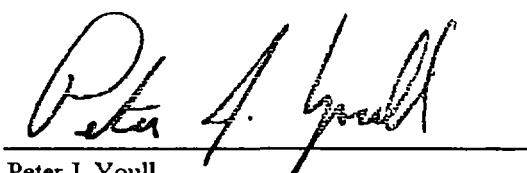
ANALYTICAL SCIENCES • COLUMBUS OPERATIONS

*Lab Number 05-10972 -Continued from Previous Page***Test Group**

	EPA Method	Test	Calc. PQL	Final Result	Units	Analysis Date	Analyst	WS#
260-COLU	8260B	Toluene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,1,1-Trichloroethane	1	< 1	ug/l	10/19/05	IR	47091
	8260B	1,1,2-Trichloroethane	0.5	< 0.5	ug/l	10/19/05	IR	47091
	8260B	Trichloroethene	1	< 1	ug/l	10/19/05	IR	47091
	8260B	Trichlorofluoromethane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	1,2,3-Trichloroproppane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Vinyl acetate	50	< 50	ug/l	10/19/05	IR	47091
	8260B	Vinyl chloride	1	< 1	ug/l	10/19/05	IR	47091
	8260B	Xylene, Total	5	< 5	ug/l	10/19/05	IR	47091
EMP		Temperature		12.3	C	10/14/05	SCB	46935
PHFIELD		pH	1.00	7.04	S.U.	10/14/05	SCB	46935
ONDFIELD		Conductivity		744	µmhos/cm	10/14/05	SCB	46935
TURBFIELD		Turbidity	0.0	16	NTU	10/14/05	SCB	46935

*End of Report*

Report Approved By:

  
Peter J. Youll  
Laboratory Director

Ohio Lab Approval # 4032 - Ohio VAP Certificate # CL0042 - US EPA Lab # OH0020

Lab Number 05-10972: Page 3

**AMERICAN ANALYTICAL LABORATORIES, INC.****- CERTIFICATE OF ANALYSIS -**

ANALYTICAL SCIENCES • COLUMBUS OPERATIONS

Columbia City-Wayne Reclamation  
5085 Reed Road  
Columbus, Ohio 43220

**Report Date:** 25-Oct-05**Attn:** BN - Mike Akins**American Analytical Lab #:** 05-10973**Sample ID:** GM-3**Date Submitted to Lab:** 10/14/05**Date Logged-In:** 10/14/05**Client Project #:** 40568**Matrix:** G/Water**- SAMPLE COLLECTION INFORMATION -****Date:** 10/14/05**Time** 1:20 PM**By:** Botley

Test Group	EPA Method	Test	Calc. PQL	Final Result	Units	Analysis Date	Analyst	WS#
NH3A	350.1	Ammonia	0.05	0.46	mg/l	10/19/05	JRW	47022
CL-300	300.0	Chloride	1.0	51.7	mg/l	10/18/05	JAO	47048
COD	410.4	Chemical Oxygen Demand	5	46	mg/l	10/18/05	SDK	46990
IAICP	6010A	Sodium	5.0	21.8	mg/l	10/24/05	CIU	47079
8260-COLU	8260B	Acetone	100	< 100	ug/l	10/19/05	IR	47091
	8260B	Acrylonitrile	50	< 50	ug/l	10/19/05	IR	47091
	8260B	Benzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromochloromethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromodichloromethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromoform	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromomethane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Carbon disulfide	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Carbon tetrachloride	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Chlorobenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Chloroethane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Chloroform	5	< 5	ug/l	10/19/05	IR	47091

Ohio Lab Approval # 4032 - Ohio VAP Certificate # CL0042 - US EPA Lab # OH0020

Lab Number 05-10973: Page 1

**AMERICAN ANALYTICAL LABORATORIES, INC.****- CERTIFICATE OF ANALYSIS -**

ANALYTICAL SCIENCES • COLUMBUS OPERATIONS

*Lab Number 05-10973 -Continued from Previous Page***Test Group**

	EPA Method	Test	Calc. PQL	Final Result	Units	Analysis Date	Analyst	WS#
260-COLU	8260B	Chloromethane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	1,2-Dibromo-3-chloropropane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Dibromochloromethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,2-Dibromoethane (EDB)	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Dibromomethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,2-Dichlorobenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,4-Dichlorobenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Trans-1,4-Dichloro-2-Butene	10	< 10	ug/l	10/19/05	IR	47091
	8260B	1,1-Dichloroethane	1	< 1	ug/l	10/19/05	IR	47091
	8260B	1,2-Dichloroethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,1-Dichloroethene	0.5	< 0.5	ug/l	10/19/05	IR	47091
	8260B	cis-1,2-Dichloroethene	0.5	55	ug/l	10/19/05	IR	47091
	8260B	trans-1,2-Dichloroethene	1	< 1	ug/l	10/19/05	IR	47091
	8260B	1,2-Dichloropropane	1	< 1	ug/l	10/19/05	IR	47091
	8260B	cis-1,3-Dichloropropene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	trans-1,3-Dichloropropene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Ethylbenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	2-Hexanone	50	< 50	ug/l	10/19/05	IR	47091
	8260B	Methyl ethyl ketone	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Methyl Iodide	10	< 10	ug/l	10/19/05	IR	47091
	8260B	4-Methyl-2-pentanone (MIBK)	50	< 50	ug/l	10/19/05	IR	47091
	8260B	Methylene chloride	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Styrene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,1,1,2-Tetrachloroethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,1,2,2-Tetrachloroethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Tetrachloroethene	5	< 5	ug/l	10/19/05	IR	47091

Ohio Lab Approval # 4032 - Ohio VAP Certificate # CL0042 - US EPA Lab # OH0020

Lab Number 05-10973: Page 2

**AMERICAN ANALYTICAL LABORATORIES, INC.****- CERTIFICATE OF ANALYSIS -**

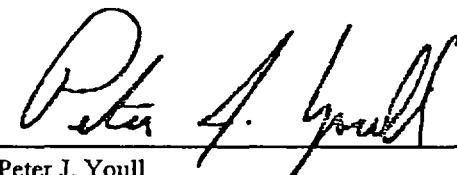
ANALYTICAL SCIENCES • COLUMBUS OPERATIONS

*Lab Number 05-10973 -Continued from Previous Page***Test Group**

	EPA Method	Test	Calc. PQL	Final Result	Units	Analysis Date	Analyst	WS#	
8260-COLU	8260B	Toluene	5	< 5	ug/l	10/19/05	IR	47091	
	8260B	1,1,1-Trichloroethane	1	< 1	ug/l	10/19/05	IR	47091	
	8260B	1,1,2-Trichloroethane	0.5	< 0.5	ug/l	10/19/05	IR	47091	
	8260B	Trichloroethene	1	< 1	ug/l	10/19/05	IR	47091	
	8260B	Trichlorofluoromethane	10	< 10	ug/l	10/19/05	IR	47091	
	8260B	1,2,3-Trichloroproppane	5	< 5	ug/l	10/19/05	IR	47091	
	8260B	Vinyl acetate	50	< 50	ug/l	10/19/05	IR	47091	
	8260B	Vinyl chloride	1	20	ug/l	10/19/05	IR	47091	
	8260B	Xylene, Total	5	< 5	ug/l	10/19/05	IR	47091	
TEMP		Temperature		17.7	C	10/14/05	SCB	46935	
PHFIELD		pH	1.00	7.51	S.U.	10/14/05	SCB	46935	
ONDFIELD		Conductivity		1	602	umhos/cn	10/14/05	SCB	46935
URBFIELD		Turbidity	0.00	334	NTU	10/14/05	SCB	46935	

*End of Report*

Report Approved By:

  
Peter J. Youll  
Laboratory Director

Ohio Lab Approval # 4032 - Ohio VAP Certificate # CL0042 - US EPA Lab # OH0020

Lab Number 05-10973: Page 3

**AMERICAN ANALYTICAL LABORATORIES, INC.**

ANALYTICAL SCIENCES • COLUMBUS OPERATIONS

**- CERTIFICATE OF ANALYSIS -**

Columbia City-Wayne Reclamation

**Date Reprinted:** 05-Dec-055085 Reed Road  
Columbus, Ohio 43220**Original Report Date:** 25-Oct-05**Attn:** BN - Mike Akins**American Analytical Lab #:** 05-10974**Sample ID:** GM-4**Date Submitted to Lab:** 10/14/05**Date Logged-In:** 10/14/05**Client Project #:** 40568**Matrix:** G/Water**- SAMPLE COLLECTION INFORMATION -****Date** 10/14/05**Time** 12:20 PM**By:** Botley

Test Group	EPA Method	Test	Calc. PQL	Final Result	Units	Analysis Date	Analyst	WS#
JH3A	350.1	Ammonia	0.05	0.35	mg/l	10/19/05	JRW	47022
CL-300	300.0	Chloride	1.0	4.2	mg/l	10/18/05	JAO	47048
COD	410.4	Chemical Oxygen Demand	5	39	mg/l	10/18/05	SDK	46990
IAICP	6010A	Sodium	5.0	16.0	mg/l	10/24/05	CIU	47079
8260-COLU	8260B	Acetone	100	< 100	ug/l	10/19/05	IR	47091
	8260B	Acrylonitrile	50	< 50	ug/l	10/19/05	IR	47091
	8260B	Benzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromochloromethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromodichloromethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromoform	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromomethane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Carbon disulfide	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Carbon tetrachloride	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Chlorobenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Chloroethane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Chloroform	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Chloromethane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	1,2-Dibromo-3-chloropropane	10	< 10	ug/l	10/19/05	IR	47091

Ohio Lab Approval # 4032 - Ohio VAP Certificate # CL0042 - US EPA Lab # OH0020

Lab Number 05-10974: Page 1

**AMERICAN ANALYTICAL LABORATORIES, INC.**

ANALYTICAL SCIENCES • COLUMBUS OPERATIONS

**- CERTIFICATE OF ANALYSIS -***Lab Number 05-10974 -Continued from Previous Page***Test Group**

	EPA Method	Test	Calc. PQL	Final Result	Units	Analysis Date	Analyst	WS#
8260-COLU	8260B	Dibromochloromethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,2-Dibromoethane (EDB)	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Dibromomethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,2-Dichlorobenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,4-Dichlorobenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Trans-1,4-Dichloro-2-Butene	10	< 10	ug/l	10/19/05	IR	47091
	8260B	1,1-Dichloroethane	1	21	ug/l	10/19/05	IR	47091
	8260B	1,2-Dichloroethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,1-Dichloroethene	0.5	4.0	ug/l	10/19/05	IR	47091
	8260B	cis-1,2-Dichloroethene	0.5	110	ug/l	10/19/05	IR	47091
	8260B	trans-1,2-Dichloroethene	1	11	ug/l	10/19/05	IR	47091
	8260B	1,2-Dichloropropane	1	< 1	ug/l	10/19/05	IR	47091
	8260B	cis-1,3-Dichloropropene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	trans-1,3-Dichloropropene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Ethylbenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	2-Hexanone	50	< 50	ug/l	10/19/05	IR	47091
	8260B	Methyl ethyl ketone	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Methyl Iodide	10	< 10	ug/l	10/19/05	IR	47091
	8260B	4-Methyl-2-pentanone (MIBK)	50	< 50	ug/l	10/19/05	IR	47091
	8260B	Methylene chloride	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Styrene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,1,1,2-Tetrachloroethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,1,2,2-Tetrachloroethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Tetrachloroethene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Toluene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,1,1-Trichloroethane	1	180	ug/l	10/19/05	IR	47091
	8260B	1,1,2-Trichloroethane	0.5	< 0.5	ug/l	10/19/05	IR	47091
	8260B	Trichloroethene	1	830	ug/l	10/19/05	IR	47091
	8260B	Trichlorofluoromethane	10	< 10	ug/l	10/19/05	IR	47091

Ohio Lab Approval # 4032 - Ohio VAP Certificate # CL0042 - US EPA Lab # OH0020

Lab Number 05-10974: Page 2

**-AMERICAN ANALYTICAL LABORATORIES, INC.**

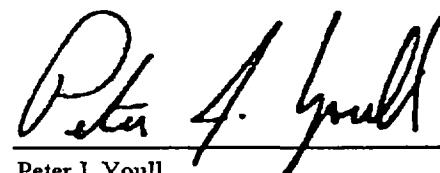
ANALYTICAL SCIENCES • COLUMBUS OPERATIONS

**- CERTIFICATE OF ANALYSIS -***Lab Number 05-10974 -Continued from Previous Page***- Test Group**

	EPA Method	Test	Calc. PQL	Final Result	Units	Analysis Date	Analyst	WS#
8260-COLU	8260B	1,2,3-Trichloropropane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Vinyl acetate	50	< 50	ug/l	10/19/05	IR	47091
	8260B	Vinyl chloride	1	< 1	ug/l	10/19/05	IR	47091
	8260B	Xylene, Total	5	< 5	ug/l	10/19/05	IR	47091
EMP		Temperature		13.7	C	10/14/05	SCB	46935
PHFIELD		pH	1.00	7.10	S.U.	10/14/05	SCB	46935
CONDFIELD		Conductivity		1	µhos/cm	10/14/05	SCB	46935
TURBFIELD		Turbidity	0.00	118	NTU	10/14/05	SCB	46935

*End of Report*

Report Approved By:

  
Peter J. Youll

Peter J. Youll

Laboratory Director

Ohio Lab Approval # 4032 - Ohio VAP Certificate # CL0042 - US EPA Lab # OH0020

Lab Number 05-10974: Page 3

**AMERICAN ANALYTICAL LABORATORIES, INC.**

ANALYTICAL SCIENCES • COLUMBUS OPERATIONS

**- CERTIFICATE OF ANALYSIS -**

Columbia City-Wayne Reclamation

**Date Reprinted:** 13-Dec-055085 Reed Road  
Columbus, Ohio 43220**Original Report Date:** 25-Oct-05**Attn:** BN - Mike Akins**American Analytical Lab #:** 05-10975**Sample ID:** GM-Duplicate**Date Submitted to Lab:** 10/14/05**Date Logged-In:** 10/14/05**Client Project #:** 40568**Matrix:** G/Water**- SAMPLE COLLECTION INFORMATION -****Date** 10/14/05**Time****By:** Botley

Test Group	EPA Method	Test	Calc. PQL	Final Result	Units	Analysis Date	Analyst	WS#
NH3A	350.1	Ammonia	0.05	0.36	mg/l	10/19/05	JRW	47022
CL-300	300.0	Chloride	1.0	4.9	mg/l	10/18/05	JAO	47048
COD	410.4	Chemical Oxygen Demand	5	26	mg/l	10/18/05	SDK	46990
NAICP	6010A	Sodium	5.0	16.9	mg/l	10/24/05	CIU	47079
8260-COLU	8260B	Acetone	100	< 100	ug/l	10/19/05	IR	47091
	8260B	Acrylonitrile	50	< 50	ug/l	10/19/05	IR	47091
	8260B	Benzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromochloromethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromodichloromethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromoform	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromomethane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Carbon disulfide	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Carbon tetrachloride	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Chlorobenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Chloroethane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Chloroform	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Chloromethane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	1,2-Dibromo-3-chloropropane	10	< 10	ug/l	10/19/05	IR	47091

Ohio Lab Approval # 4032 - Ohio VAP Certificate # CL0042 - US EPA Lab # OH0020

Lab Number 05-10975: Page 1

**AMERICAN ANALYTICAL LABORATORIES, INC.**

ANALYTICAL SCIENCES • COLUMBUS OPERATIONS

**- CERTIFICATE OF ANALYSIS -***Lab Number 05-10975 -Continued from Previous Page***Test Group**

	EPA Method	Test	Calc. PQL	Final Result	Units	Analysis Date	Analyst	WS#
8260-COLU	8260B	Dibromochloromethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,2-Dibromoethane (EDB)	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Dibromomethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,2-Dichlorobenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,4-Dichlorobenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Trans-1,4-Dichloro-2-Butene	10	< 10	ug/l	10/19/05	IR	47091
	8260B	1,1-Dichloroethane	1	20	ug/l	10/19/05	IR	47091
	8260B	1,2-Dichloroethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,1-Dichloroethene	0.5	3.7	ug/l	10/19/05	IR	47091
	8260B	cis-1,2-Dichloroethene	0.5	110	ug/l	10/19/05	IR	47091
	8260B	trans-1,2-Dichloroethene	1	10.0	ug/l	10/19/05	IR	47091
	8260B	1,2-Dichloropropane	1	< 1	ug/l	10/19/05	IR	47091
	8260B	cis-1,3-Dichloropropene	5.0	< 5.0	ug/l	10/19/05	IR	47091
	8260B	trans-1,3-Dichloropropene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Ethylbenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	2-Hexanone	50	< 50	ug/l	10/19/05	IR	47091
	8260B	Methyl ethyl ketone	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Methyl Iodide	10	< 10	ug/l	10/19/05	IR	47091
	8260B	4-Methyl-2-pentanone (MIBK)	50	< 50	ug/l	10/19/05	IR	47091
	8260B	Methylene chloride	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Styrene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,1,1,2-Tetrachloroethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,1,2,2-Tetrachloroethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Tetrachloroethene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Toluene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,1,1-Trichloroethane	1	180	ug/l	10/19/05	IR	47091
	8260B	1,1,2-Trichloroethane	0.5	< 0.5	ug/l	10/19/05	IR	47091
	8260B	Trichloroethene	1	860	ug/l	10/19/05	IR	47091
	8260B	Trichlorofluoromethane	10	< 10	ug/l	10/19/05	IR	47091

Ohio Lab Approval # 4032 - Ohio VAP Certificate # CL0042 - US EPA Lab # OH0020

Lab Number 05-10975: Page 2

**AMERICAN ANALYTICAL LABORATORIES, INC.**

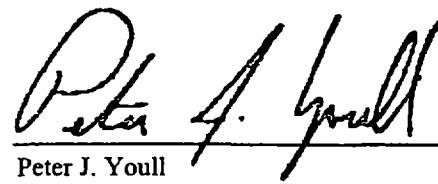
ANALYTICAL SCIENCES • COLUMBUS OPERATIONS

**- CERTIFICATE OF ANALYSIS -***Lab Number 05-10975 -Continued from Previous Page***Test Group**

	EPA Method	Test	Calc. PQL	Final Result	Units	Analysis Date	Analyst	WS#
■ 8260-COLU	8260B	1,2,3-Trichloropropane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Vinyl acetate	50	< 50	ug/l	10/19/05	IR	47091
	8260B	Vinyl chloride	1	< 1	ug/l	10/19/05	IR	47091
	8260B	Xylene, Total	5	< 5	ug/l	10/19/05	IR	47091

*End of Report*

Report Approved By:

  
Peter J. YoullPeter J. Youll  
Laboratory Director

Ohio Lab Approval # 4032 - Ohio VAP Certificate # CL0042 - US EPA Lab # OH0020

Lab Number 05-10975: Page 3

**- AMERICAN ANALYTICAL LABORATORIES, INC.**

ANALYTICAL SCIENCES • COLUMBUS OPERATIONS

**- CERTIFICATE OF ANALYSIS -**

Columbia City-Wayne Reclamation  
5085 Reed Road  
Columbus, Ohio 43220

**Report Date:** 25-Oct-05**Attn:** BN - Mike Akins**American Analytical Lab #:** 05-10976**Sample ID:** Equipment Blank**Date Submitted to Lab:** 10/14/05**Date Logged-In:** 10/14/05**Client Project #:** 40568**Matrix:** Water**- SAMPLE COLLECTION INFORMATION -****Date:** 10/14/05**Time** 12:45 PM**By:** Botley

Test Group	EPA Method	Test	Calc. PQL	Final Result	Units	Analysis Date	Analyst	WS#
NH3A	350.1	Ammonia	0.05	< 0.05	mg/l	10/19/05	JRW	47022
CL-300	300.0	Chloride	1.0	< 1.0	mg/l	10/18/05	JAO	47048
COD	410.4	Chemical Oxygen Demand	5	< 5	mg/l	10/18/05	SDK	46990
IAICP	6010A	Sodium	0.10	0.11	mg/l	10/24/05	CTU	47079
8260-COLU	8260B	Acetone	100	< 100	ug/l	10/19/05	IR	47091
	8260B	Acrylonitrile	50	< 50	ug/l	10/19/05	IR	47091
	8260B	Benzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromoform	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromochloromethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromodichloromethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromomethane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Carbon disulfide	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Carbon tetrachloride	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Chlorobenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Chloroethane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Chloroform	5	< 5	ug/l	10/19/05	IR	47091

Ohio Lab Approval # 4032 - Ohio VAP Certificate # CL0042 - US EPA Lab # OH0020

Lab Number 05-10976: Page 1

**AMERICAN ANALYTICAL LABORATORIES, INC.****- CERTIFICATE OF ANALYSIS -**

ANALYTICAL SCIENCES • COLUMBUS OPERATIONS

*Lab Number 05-10976 -Continued from Previous Page***Test Group**

	EPA Method	Test	Calc. PQL	Final Result	Units	Analysis Date	Analyst	WS#
260-COLU	8260B	Chloromethane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	1,2-Dibromo-3-chloropropane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Dibromochloromethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,2-Dibromoethane (EDB)	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Dibromomethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,2-Dichlorobenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,4-Dichlorobenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Trans-1,4-Dichloro-2-Butene	10	< 10	ug/l	10/19/05	IR	47091
	8260B	1,1-Dichloroethane	1	< 1	ug/l	10/19/05	IR	47091
	8260B	1,2-Dichloroethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,1-Dichloroethene	0.5	< 0.5	ug/l	10/19/05	IR	47091
	8260B	cis-1,2-Dichloroethene	0.5	< 0.5	ug/l	10/19/05	IR	47091
	8260B	trans-1,2-Dichloroethene	1	< 1	ug/l	10/19/05	IR	47091
	8260B	1,2-Dichloropropane	1	< 1	ug/l	10/19/05	IR	47091
	8260B	cis-1,3-Dichloropropene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	trans-1,3-Dichloropropene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Ethylbenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	2-Hexanone	50	< 50	ug/l	10/19/05	IR	47091
	8260B	Methyl ethyl ketone	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Methyl Iodide	10	< 10	ug/l	10/19/05	IR	47091
	8260B	4-Methyl-2-pentanone (MIBK)	50	< 50	ug/l	10/19/05	IR	47091
	8260B	Methylene chloride	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Styrene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,1,1,2-Tetrachloroethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,1,2,2-Tetrachloroethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Tetrachloroethene	5	< 5	ug/l	10/19/05	IR	47091

Ohio Lab Approval # 4032 - Ohio VAP Certificate # CL0042 - US EPA Lab # OH0020

Lab Number 05-10976: Page 2

**AMERICAN ANALYTICAL LABORATORIES, INC.****- CERTIFICATE OF ANALYSIS -**

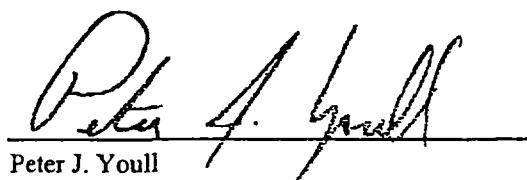
ANALYTICAL SCIENCES • COLUMBUS OPERATIONS

*Lab Number 05-10976 -Continued from Previous Page***Test Group**

	EPA Method	Test	Calc. PQL	Final Result	Units	Analysis Date	Analyst	WS#
#260-COLU	8260B	Toluene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,1,1-Trichloroethane	1	< 1	ug/l	10/19/05	IR	47091
	8260B	1,1,2-Trichloroethane	0.5	< 0.5	ug/l	10/19/05	IR	47091
	8260B	Trichloroethene	1	< 1	ug/l	10/19/05	IR	47091
	8260B	Trichlorofluoromethane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	1,2,3-Trichloroproppane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Vinyl acetate	50	< 50	ug/l	10/19/05	IR	47091
	8260B	Vinyl chloride	1	< 1	ug/l	10/19/05	IR	47091
	8260B	Xylene, Total	5	< 5	ug/l	10/19/05	IR	47091

*End of Report*

Report Approved By:

  
Peter J. Youll  
Laboratory Director

Ohio Lab Approval # 4032 - Ohio VAP Certificate # CL0042 - US EPA Lab # OH0020

Lab Number 05-10976: Page 3

**AMERICAN ANALYTICAL LABORATORIES, INC.****- CERTIFICATE OF ANALYSIS -**

ANALYTICAL SCIENCES • COLUMBUS OPERATIONS

Columbia City-Wayne Reclamation  
5085 Reed Road  
Columbus, Ohio 43220

**Report Date:** 25-Oct-05**Attn:** BN - Mike Akins**American Analytical Lab #:** 05-10977**Sample ID:** Trip Blank**Date Submitted to Lab:** 10/14/05**Date Logged-In:** 10/14/05**Client Project #:** 40568**Matrix:** Water**- SAMPLE COLLECTION INFORMATION -****Date:** 10/14/05**Time****By:** Lab

Test Group	EPA Method	Test	Calc. PQL	Final Result	Units	Analysis Date	Analyst	WS#
3260-COLU	8260B	Acetone	100	< 100	ug/l	10/19/05	IR	47091
	8260B	Acrylonitrile	50	< 50	ug/l	10/19/05	IR	47091
	8260B	Benzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromochloromethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromodichloromethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromoform	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Bromomethane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Carbon disulfide	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Carbon tetrachloride	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Chlorobenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Chloroethane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Chloroform	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Chloromethane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	1,2-Dibromo-3-chloropropane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Dibromochloromethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,2-Dibromoethane (EDB)	5	< 5	ug/l	10/19/05	IR	47091

Ohio Lab Approval # 4032 - Ohio VAP Certificate # CL0042 - US EPA Lab # OH0020

Lab Number 05-10977: Page 1

**AMERICAN ANALYTICAL LABORATORIES, INC.****- CERTIFICATE OF ANALYSIS -**

ANALYTICAL SCIENCES • COLUMBUS OPERATIONS

*Lab Number 05-10977 -Continued from Previous Page***Test Group**

	EPA Method	Test	Calc. PQL	Final Result	Units	Analysis Date	Analyst	WS#
8260-COLU	8260B	Dibromomethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,2-Dichlorobenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,4-Dichlorobenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Trans-1,4-Dichloro-2-Butene	10	< 10	ug/l	10/19/05	IR	47091
	8260B	1,1-Dichloroethane	1	< 1	ug/l	10/19/05	IR	47091
	8260B	1,2-Dichloroethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,1-Dichloroethene	0.5	< 0.5	ug/l	10/19/05	IR	47091
	8260B	cis-1,2-Dichloroethene	0.5	< 0.5	ug/l	10/19/05	IR	47091
	8260B	trans-1,2-Dichloroethene	1	< 1	ug/l	10/19/05	IR	47091
	8260B	1,2-Dichloropropane	1	< 1	ug/l	10/19/05	IR	47091
	8260B	cis-1,3-Dichloropropene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	trans-1,3-Dichloropropene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Ethylbenzene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	2-Hexanone	50	< 50	ug/l	10/19/05	IR	47091
	8260B	Methyl ethyl ketone	10	< 10	ug/l	10/19/05	IR	47091
	8260B	Methyl Iodide	10	< 10	ug/l	10/19/05	IR	47091
	8260B	4-Methyl-2-pentanone (MIBK)	50	< 50	ug/l	10/19/05	IR	47091
	8260B	Methylene chloride	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Styrene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,1,1,2-Tetrachloroethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,1,2,2-Tetrachloroethane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Tetrachloroethene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Toluene	5	< 5	ug/l	10/19/05	IR	47091
	8260B	1,1,1-Trichloroethane	1	< 1	ug/l	10/19/05	IR	47091
	8260B	1,1,2-Trichloroethane	0.5	< 0.5	ug/l	10/19/05	IR	47091
	8260B	Trichloroethene	1	< 1	ug/l	10/19/05	IR	47091

Ohio Lab Approval # 4032 - Ohio VAP Certificate # CL0042 - US EPA Lab # OH0020

Lab Number 05-10977: Page 2

**AMERICAN ANALYTICAL LABORATORIES, INC.****- CERTIFICATE OF ANALYSIS -**

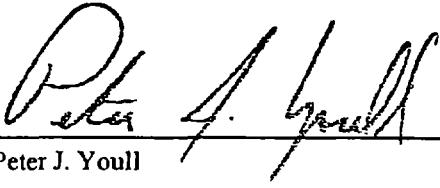
ANALYTICAL SCIENCES • COLUMBUS OPERATIONS

*Lab Number 05-10977 -Continued from Previous Page***Test Group**

	EPA Method	Test	Calc. PQL	Final Result	Units	Analysis Date	Analyst	WS#
260-COLU	8260B	Trichlorofluoromethane	10	< 10	ug/l	10/19/05	IR	47091
	8260B	1,2,3-Trichloropropane	5	< 5	ug/l	10/19/05	IR	47091
	8260B	Vinyl acetate	50	< 50	ug/l	10/19/05	IR	47091
	8260B	Vinyl chloride	1	< 1	ug/l	10/19/05	IR	47091
	8260B	Xylene, Total	5	< 5	ug/l	10/19/05	IR	47091

*End of Report*

Report Approved By:

  
Peter J. Youll  
Laboratory Director

Ohio Lab Approval # 4032 - Ohio VAP Certificate # CL0042 - US EPA Lab # OH0020

Lab Number 05-10977: Page 3

**AMERICAN ANALYTICAL LABORATORIES, INC.**

ANALYTICAL SCIENCES • COLUMBUS OPERATIONS

**American Analytical Laboratories, Inc.  
Columbus Operations**

**Quality Assurance Report  
for  
Burgess & Niple, Inc.  
Columbia City-Wayne Reclamation**

**CLIENT: Burgess & Niple, Inc.**

**CLIENT CONTACT: Mike Akins**

**CLIENT PROJECT NO: 40568**

**PROJECT NAME: Columbia City-Wayne Reclamation**

**SAMPLING EVENT: October 14, 2005**

**Burgess & Niple, Inc.**  
**Columbia City – Wayne Reclamation**  
**October 2005**  
**Sample Inventory**

Lab ID	Client ID	Sample ID	Collected Date	Log Date	Sample Type	Collected By
05-10971	40568-COL	GM-1	10/14/05	10/14/05	G/Water	Stephen Botley
05-10972	40568-COL	GM-2	10/14/05	10/14/05	G/Water	Stephen Botley
05-10973	40568-COL	GM-3	10/14/05	10/14/05	G/Water	Stephen Botley
05-10974	40568-COL	GM-4	10/14/05	10/14/05	G/Water	Stephen Botley
05-10975	40568-COL	GM-Duplicate	10/14/05	10/14/05	G/Water	Stephen Botley
05-10976	40568-COL	Equipment Blank	10/14/05	10/14/05	DI Water	Stephen Botley
05-10977	40568-COL	Trip Blank	10/14/05	10/14/05	DI Water	Stephen Botley

**Burgess & Niple, Inc.  
Columbia City – Wayne Reclamation  
October 2005**

**Case Narrative**

---

**Sodium (6010A)**

- All analyses were verified by use of laboratory control samples, initial and continuing calibration verifications, instruments blanks, analytical spikes, and sample duplicates.
- There were no deviations. All QC within limits.

**Inorganics (350.1, 300.0, 410.4)**

- No deviations. All QC within limits.

**Volatile Organic Compounds (8260):**

- Samples subcontracted.
- All instrument related QC associated with these samples passed.
- All sample related QC associated with this batch passed.
- Surrogates attached.

**Field Parameters:**

- All field parameters provided by client and included on the reports.

**Temperature Log:**

- All samples received in cooler with visible ice at 6.5° C.

**Burgess & Niple, Inc.  
Columbia City – Wayne Reclamation  
October 2005**

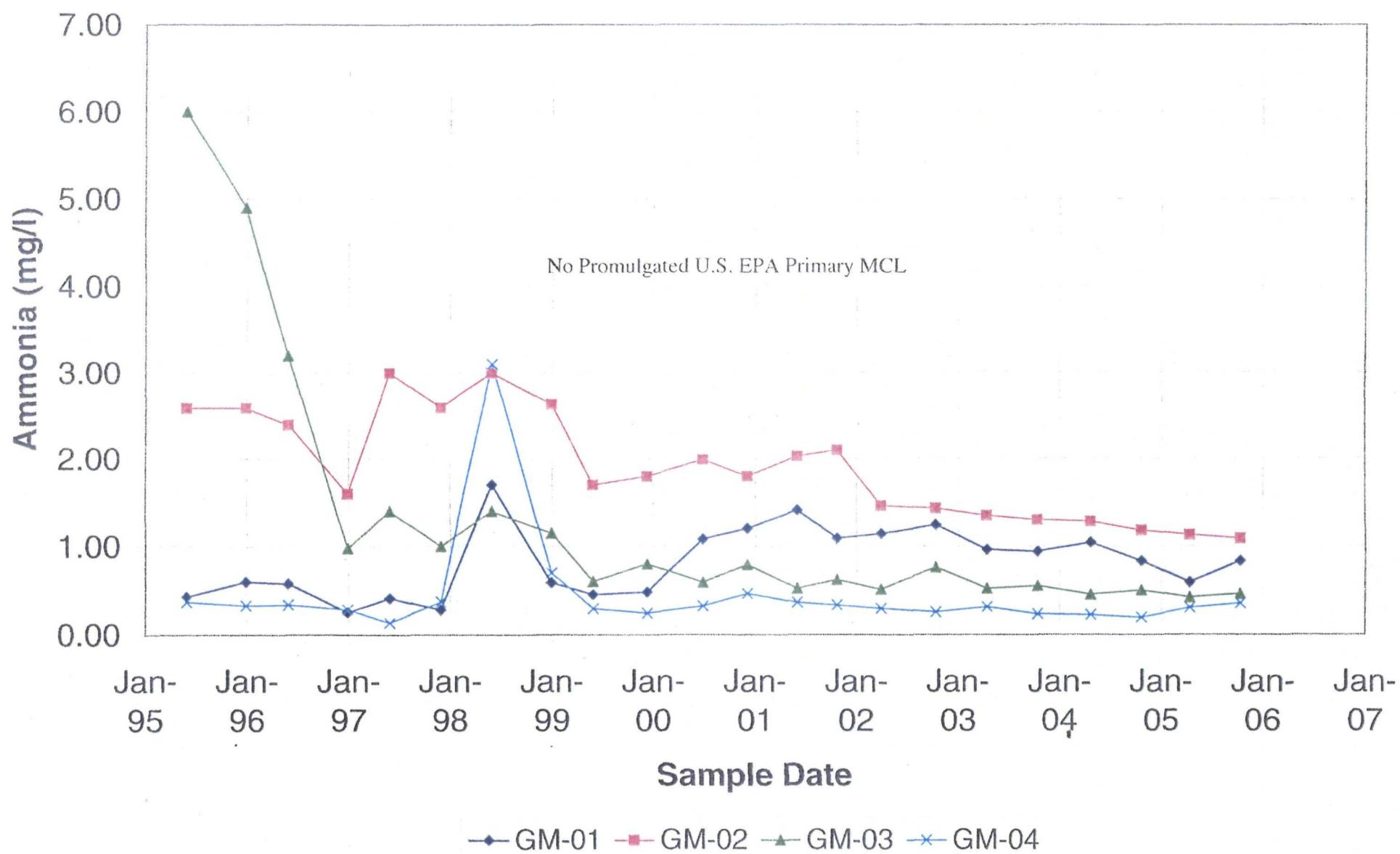
**Surrogates**

**Volatile Organic Compounds (8260B):**

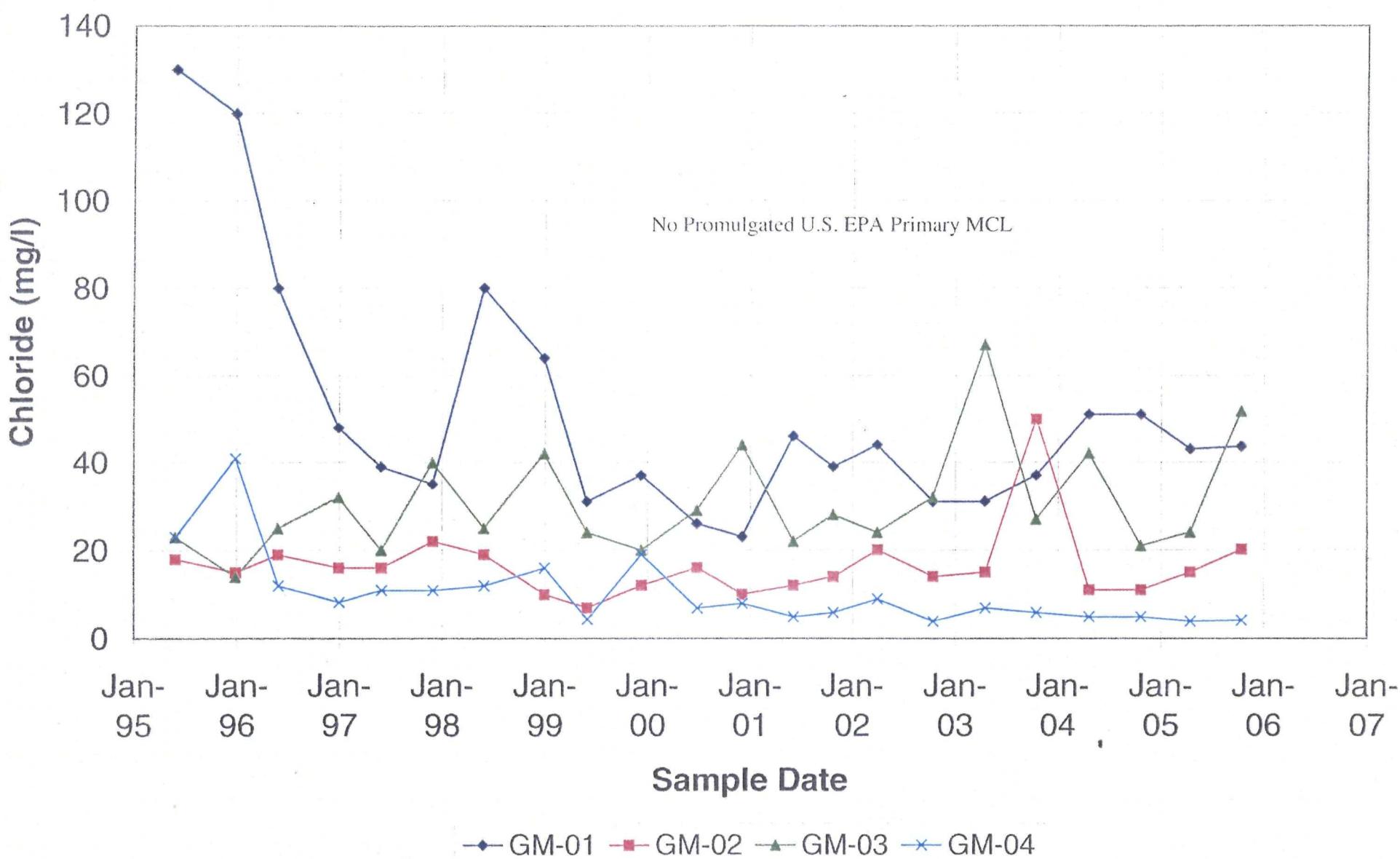
	Acceptance Range %	05-10971	05-10972	05-10973	05-10974	05-10975	05-10976	05-10977
Dibromofluoromethane	80-120	96.5	95.8	94.4	87.7	85.3	94.4	95.3
1,2-Dichloroethane-d4	80-120	90.9	92.9	90.5	90.7	88.4	91.8	86.8
Toluene-d8	80-120	103	100	98.6	102	100	98.2	101
4-Bromofluorobenzene	80-120	96.6	91.6	93.3	91.9	94.2	93.3	91.1

**ATTACHMENT 3**  
**TIME-VERSUS-CONCENTRATION PLOTS**

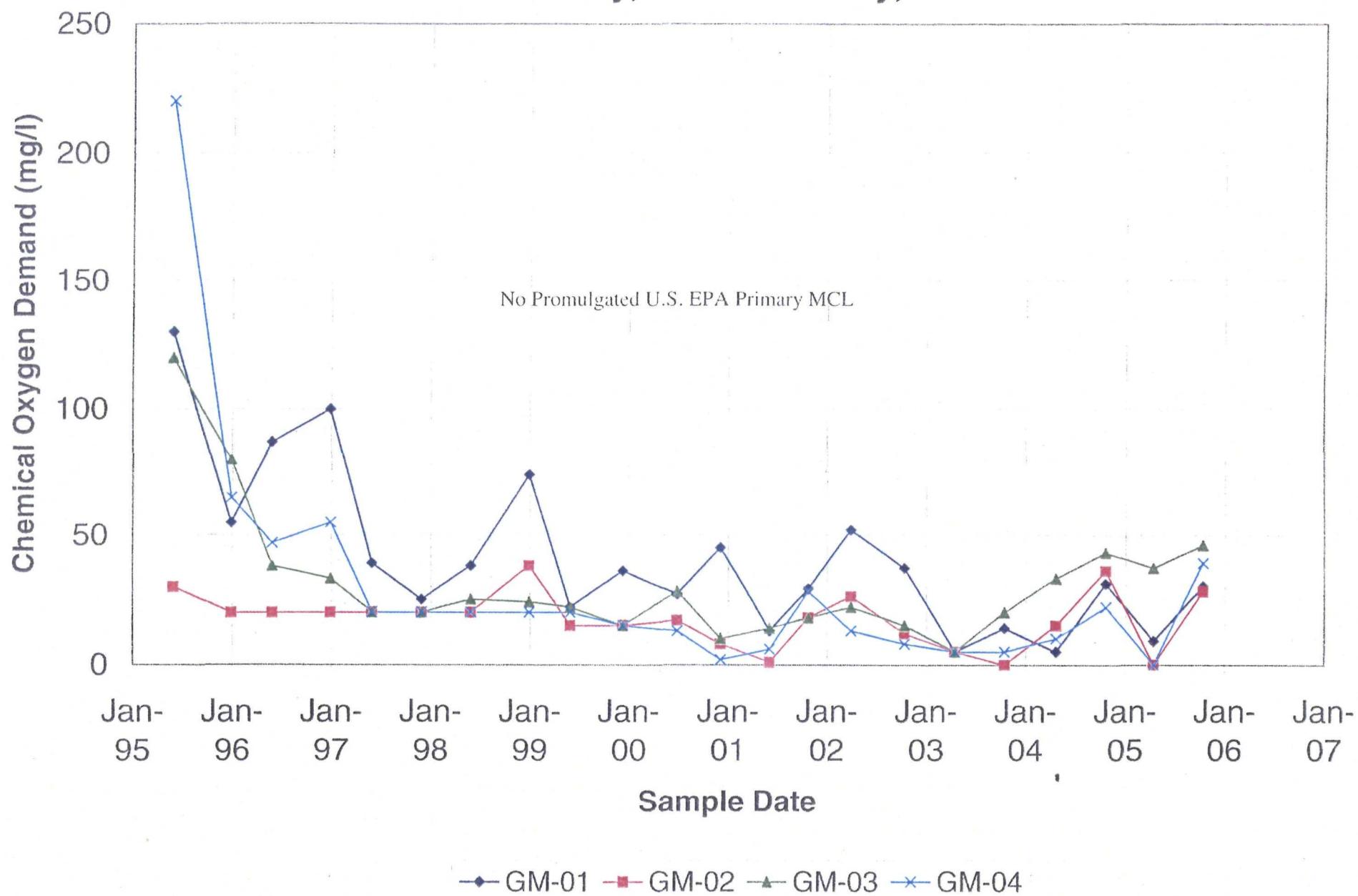
## Ammonia Groundwater Concentrations WRR Facility, Columbia City, IN



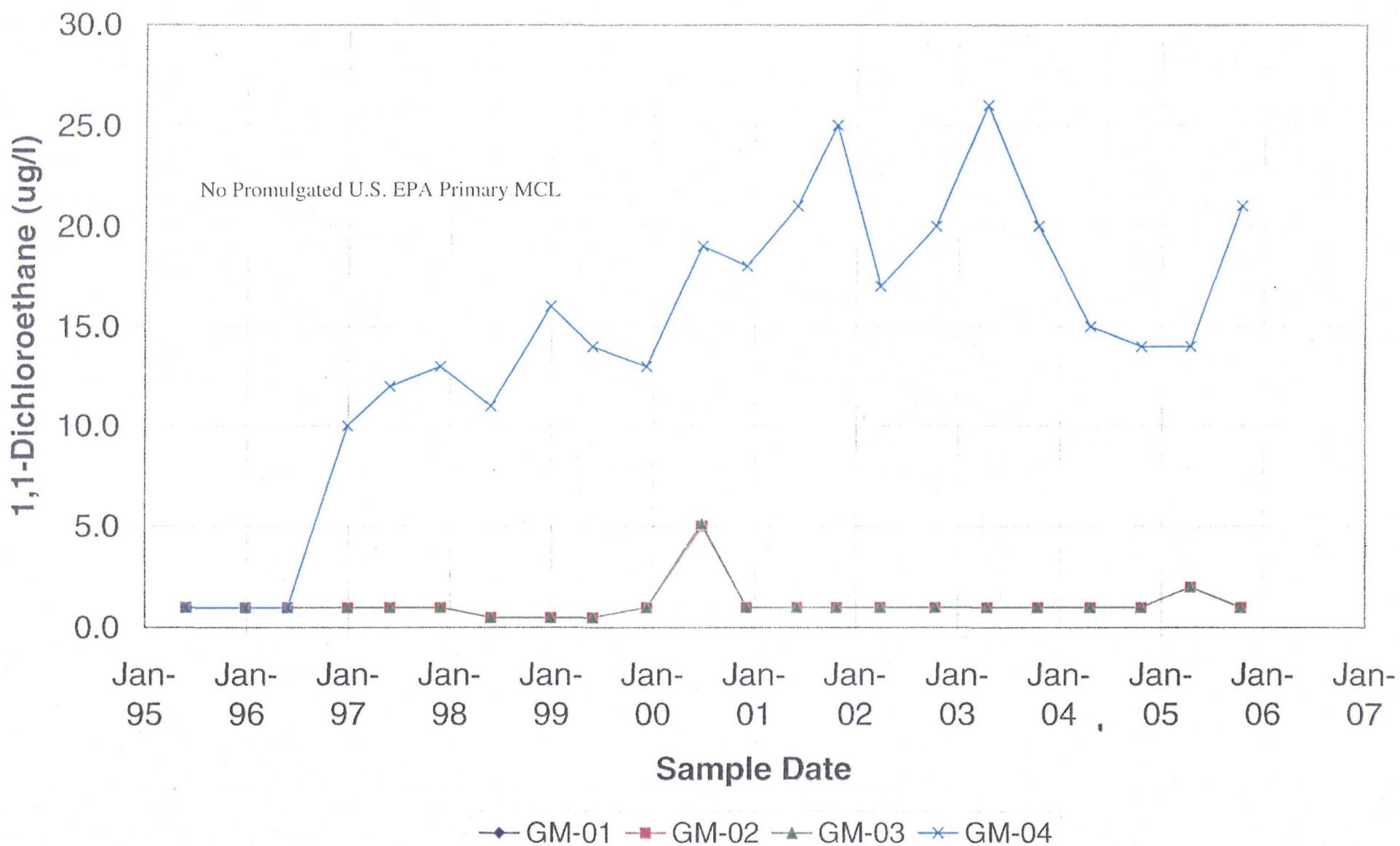
## Chloride Groundwater Concentrations WRR Facility, Columbia City, IN



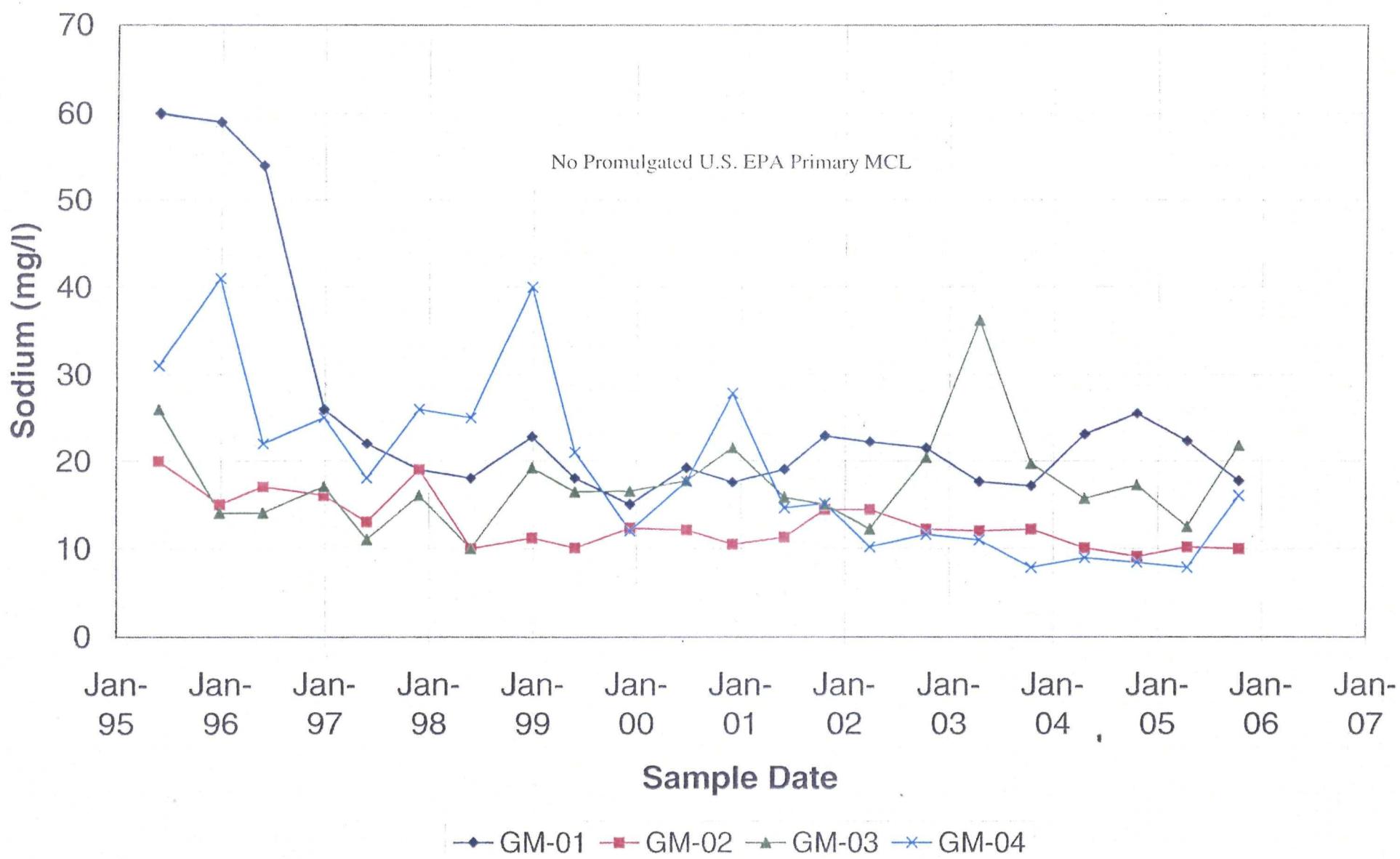
## Chemical Oxygen Demand Groundwater Concentrations WRR Facility, Columbia City, IN



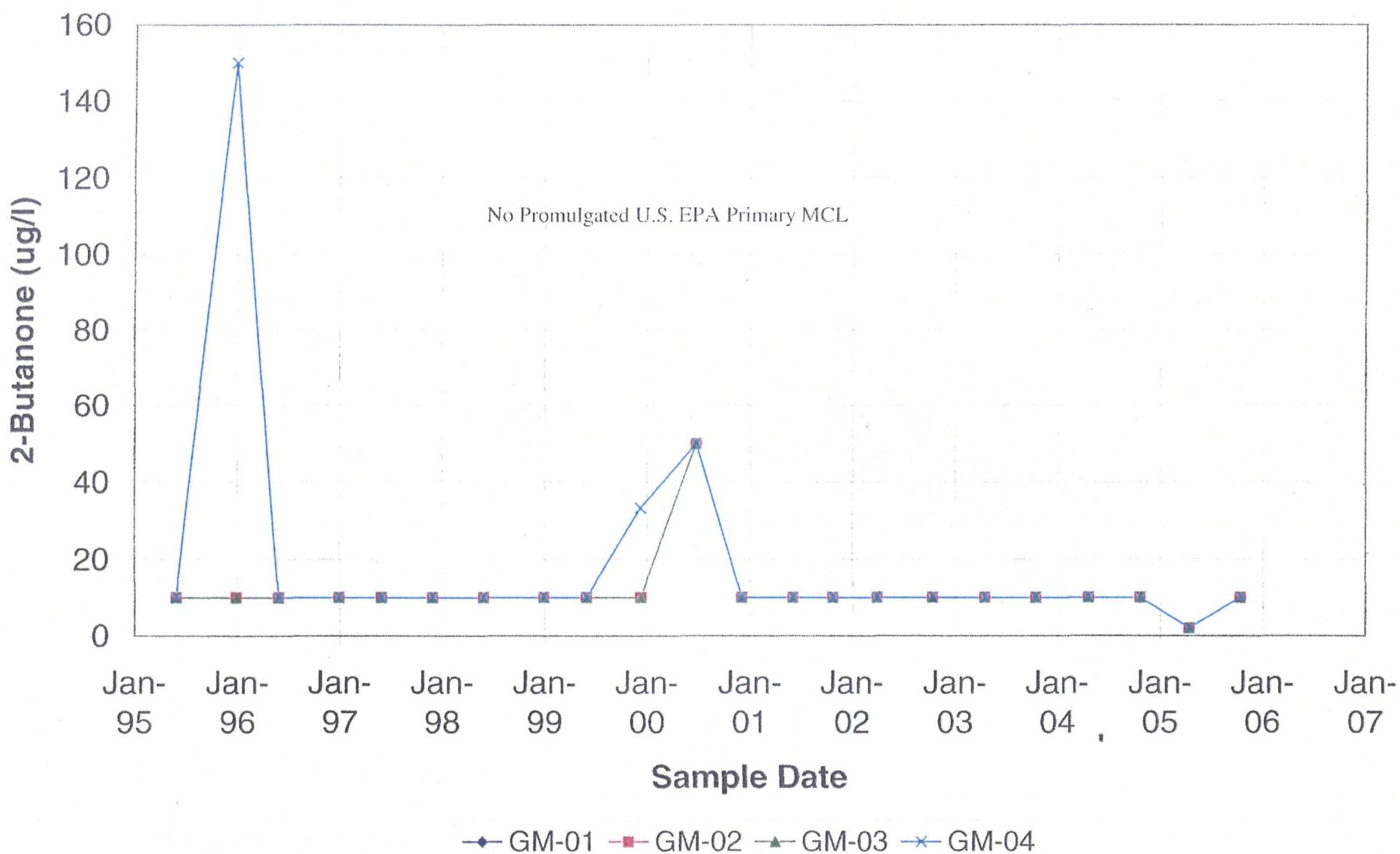
## 1,1-Dichloroethane Groundwater Concentrations WRR Facility, Columbia City, IN



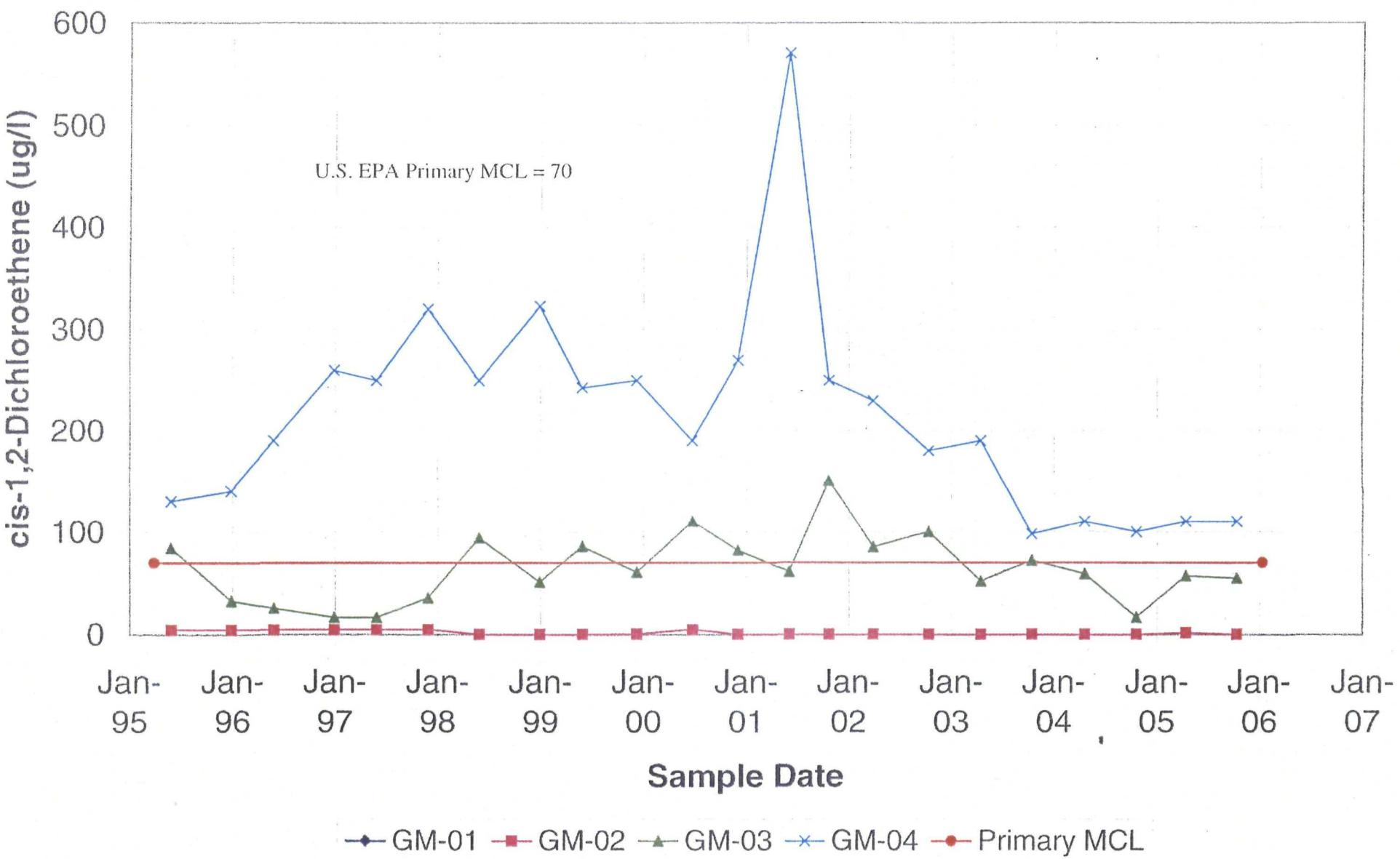
## Sodium Groundwater Concentrations WRR Facility, Columbia City, IN



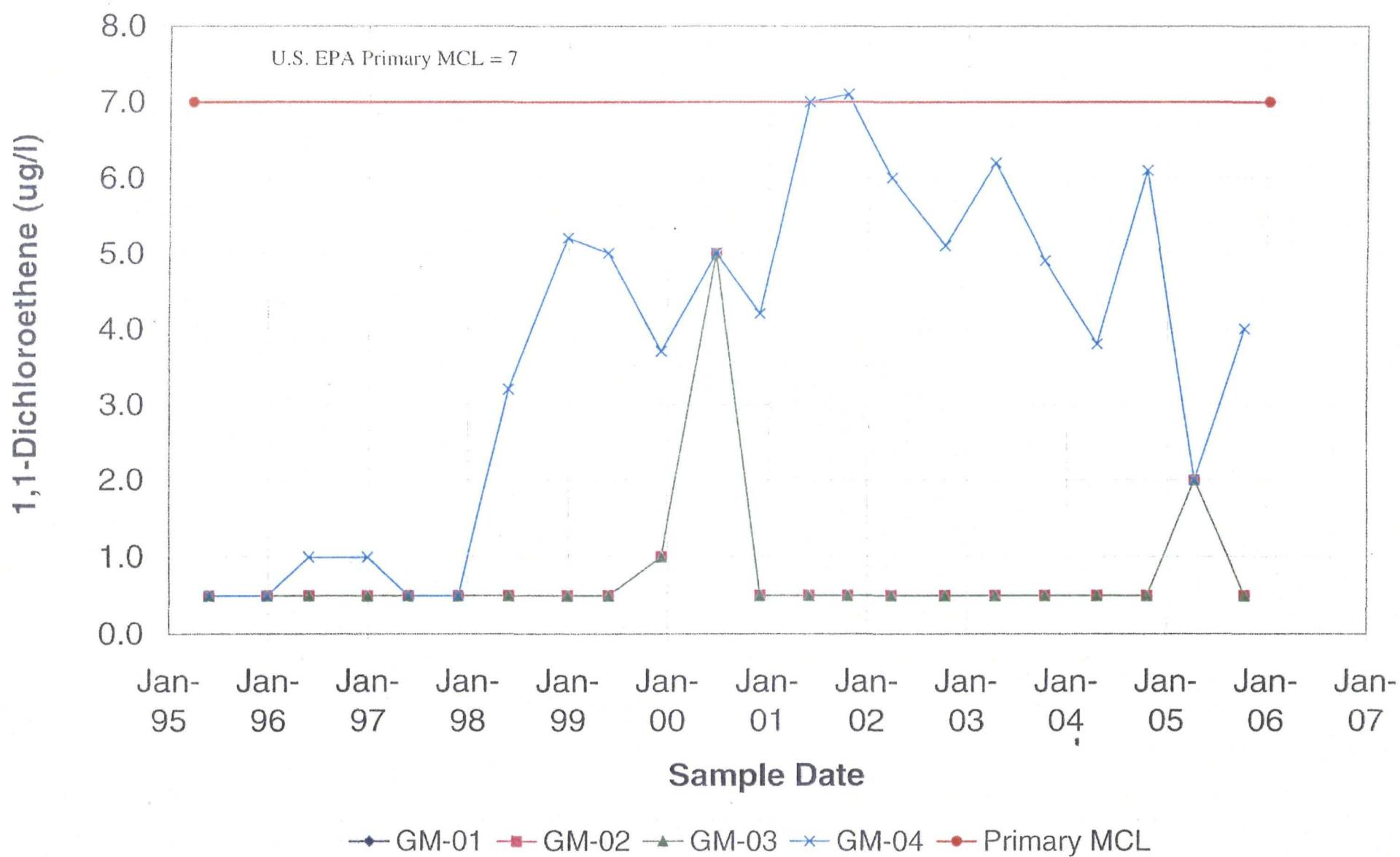
## 2-Butanone (MEK) Groundwater Concentrations WRR Facility, Columbia City, IN



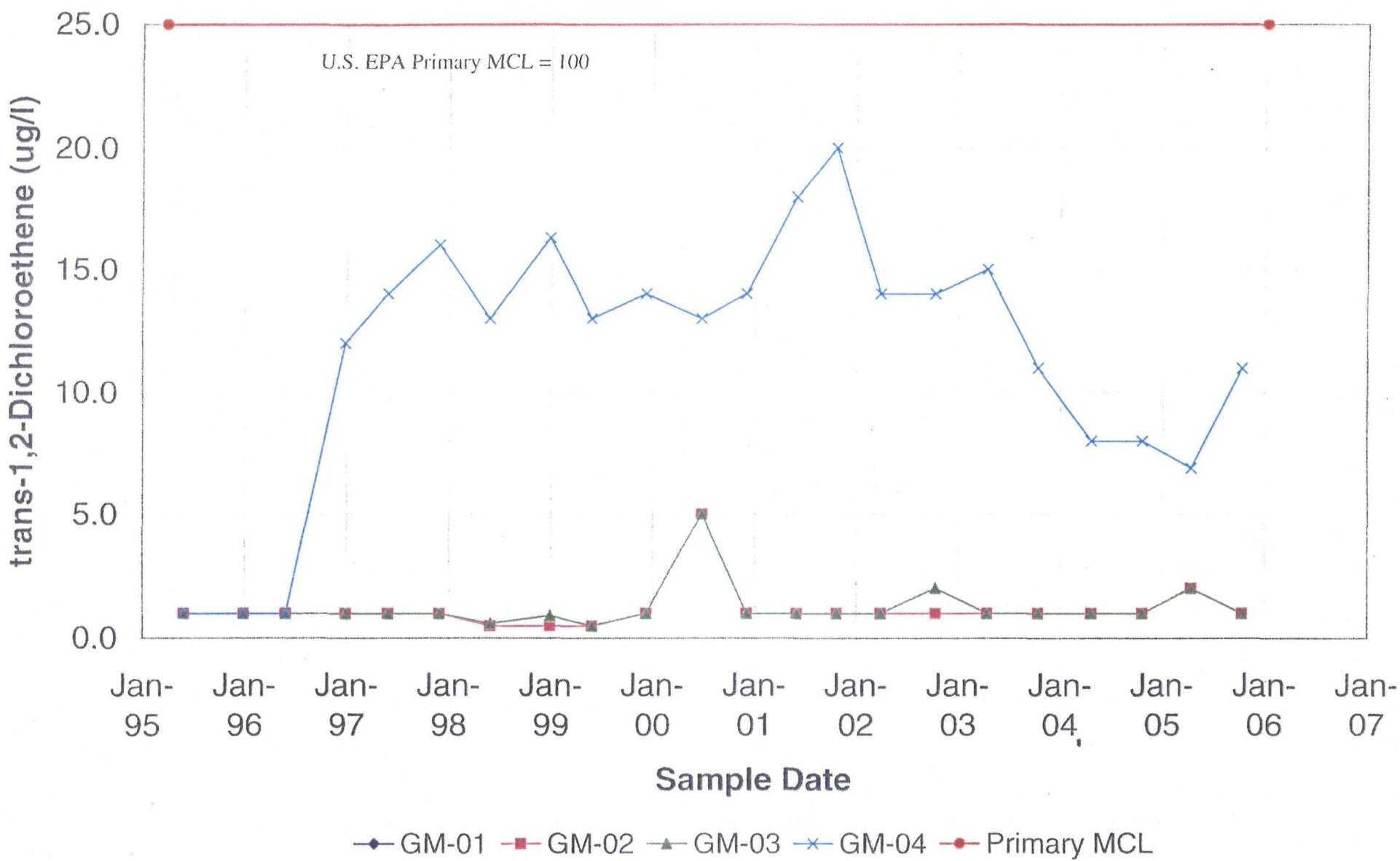
## cis-1,2-Dichloroethene Groundwater Concentrations WRR Facility, Columbia City, IN



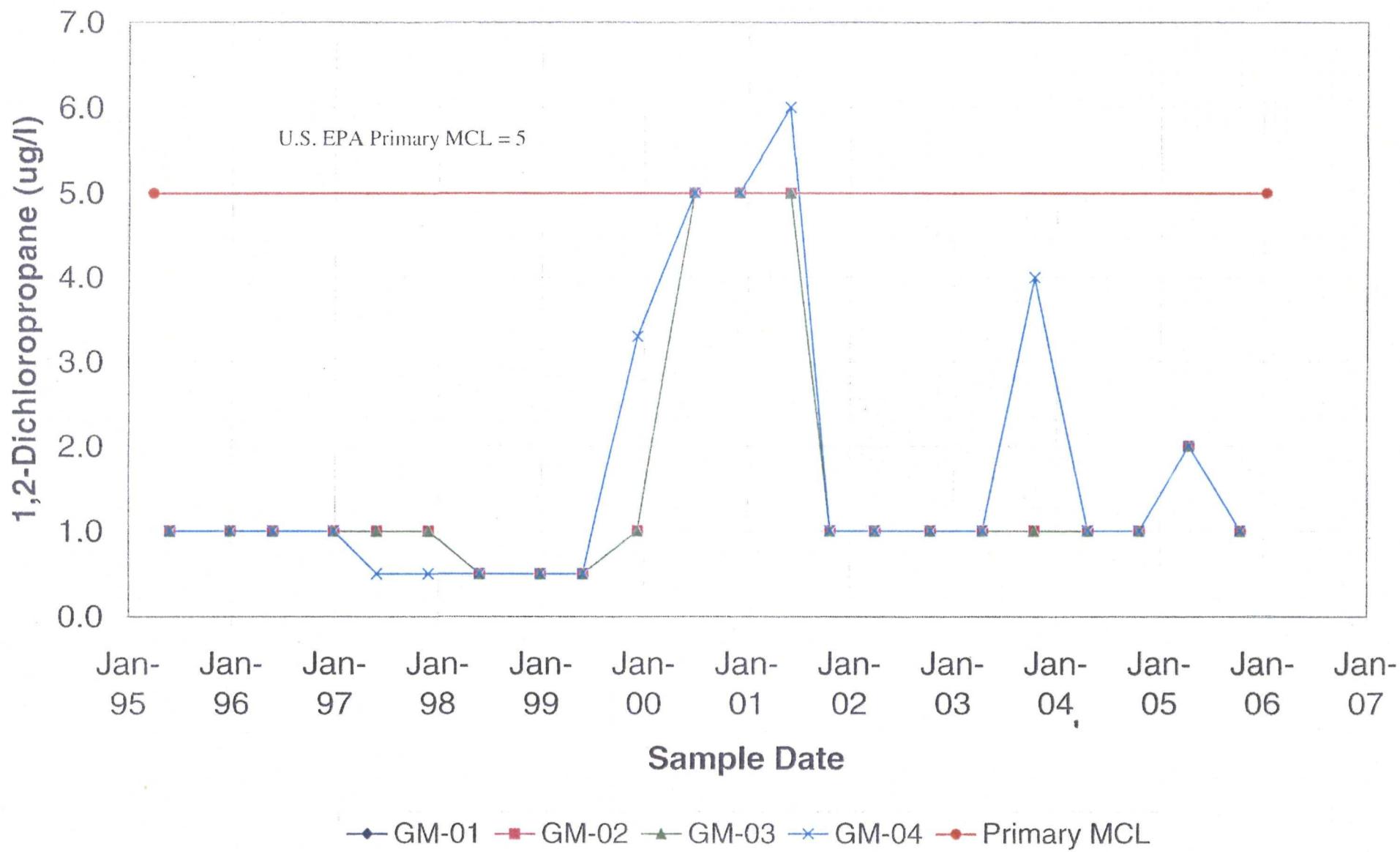
## 1,1-Dichloroethene Groundwater Concentrations WRR Facility, Columbia City, IN



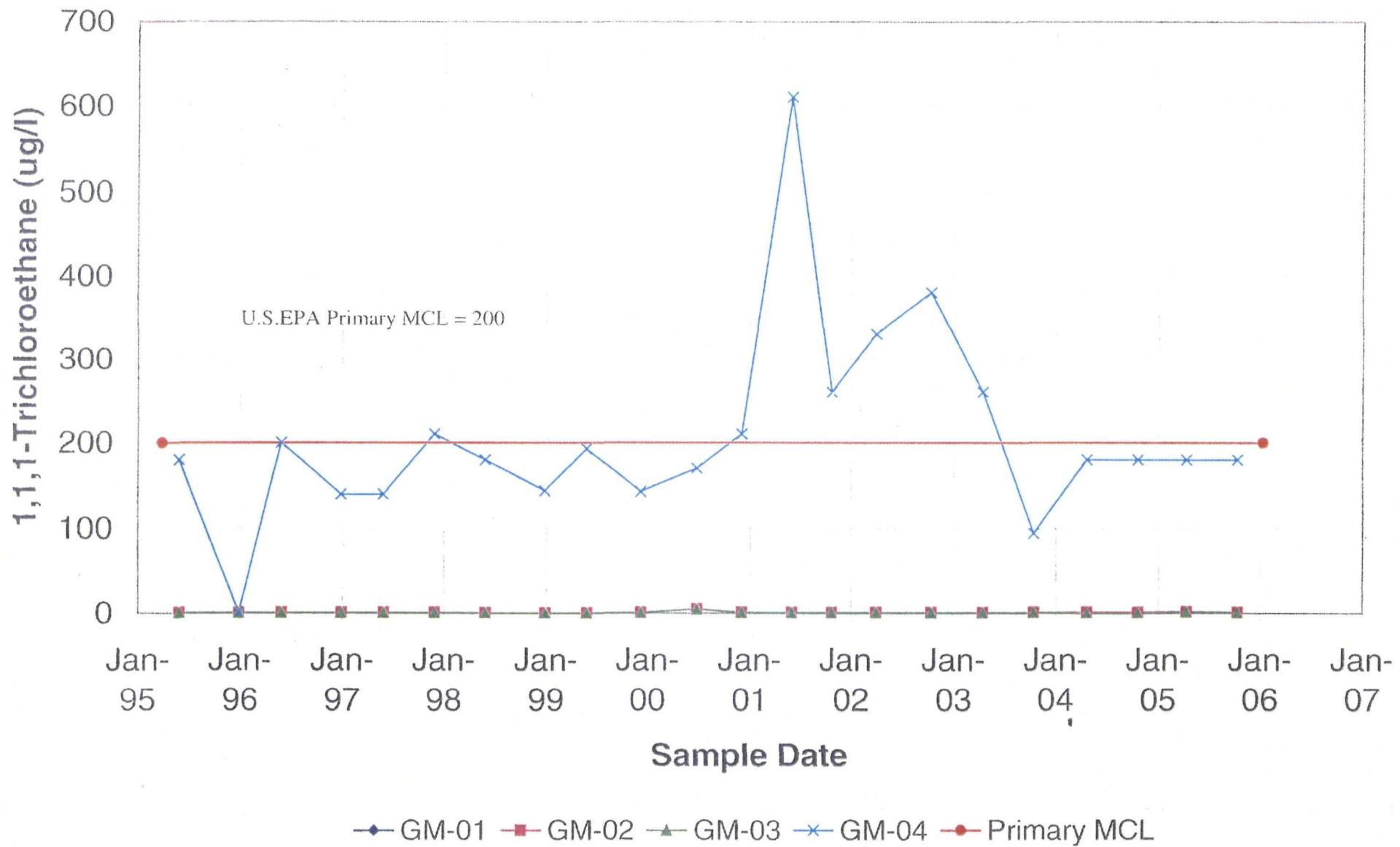
## trans-1,2-Dichloroethene Groundwater Concentrations WRR Facility, Columbia City, IN



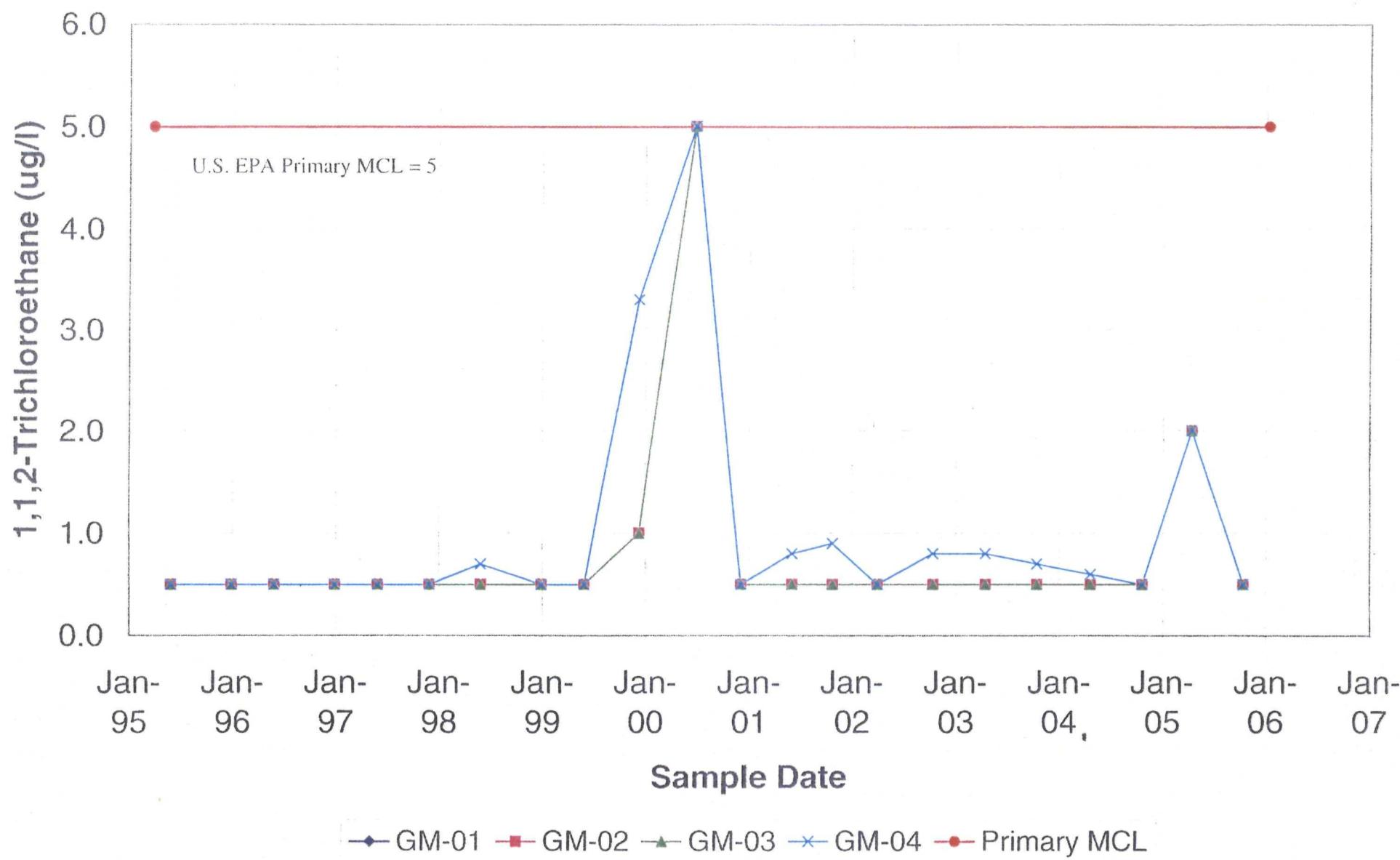
## 1,2-Dichloropropane Groundwater Concentrations WRR Facility, Columbia City, IN



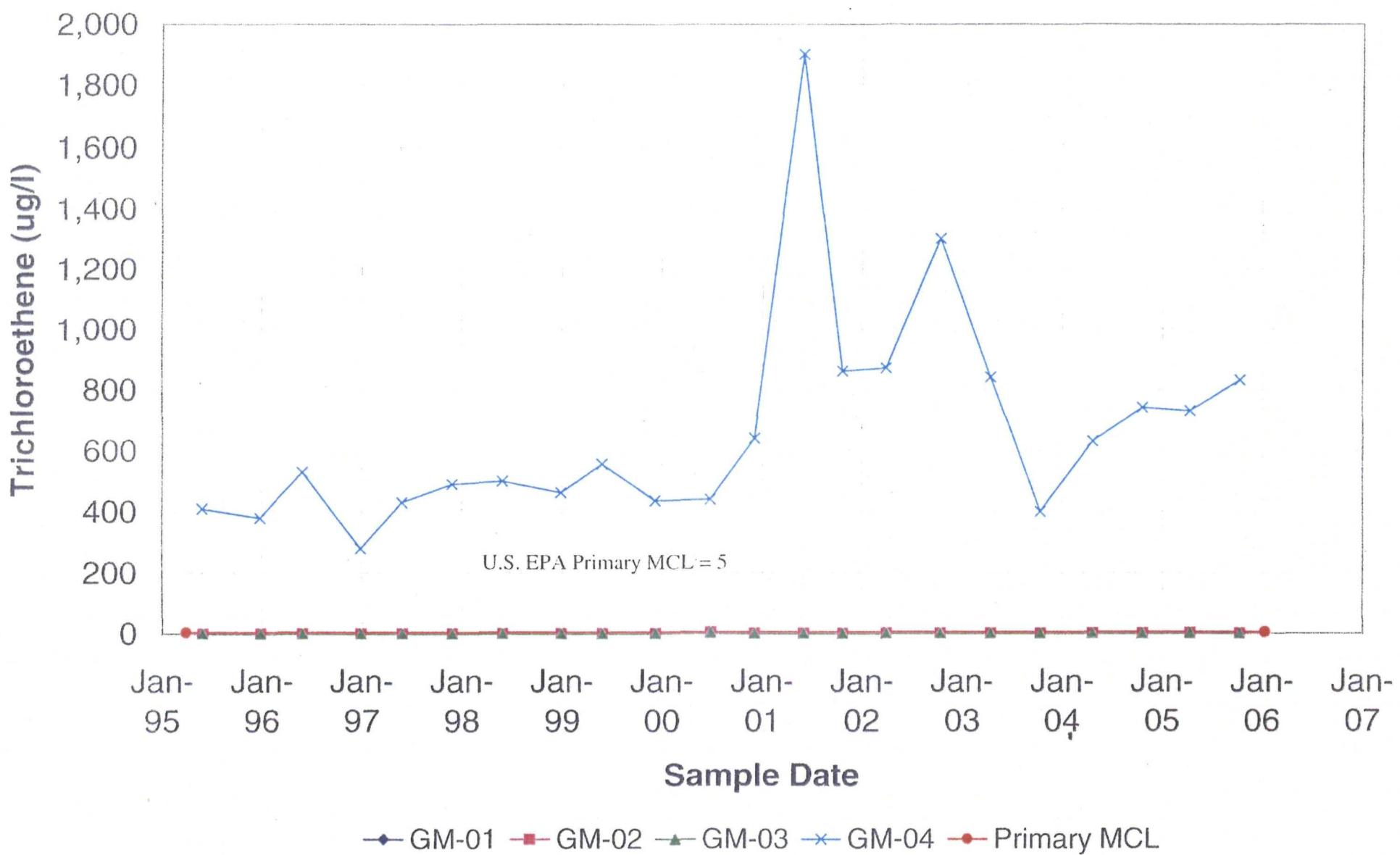
## 1,1,1-Trichloroethane Groundwater Concentrations WRR Facility, Columbia City, IN



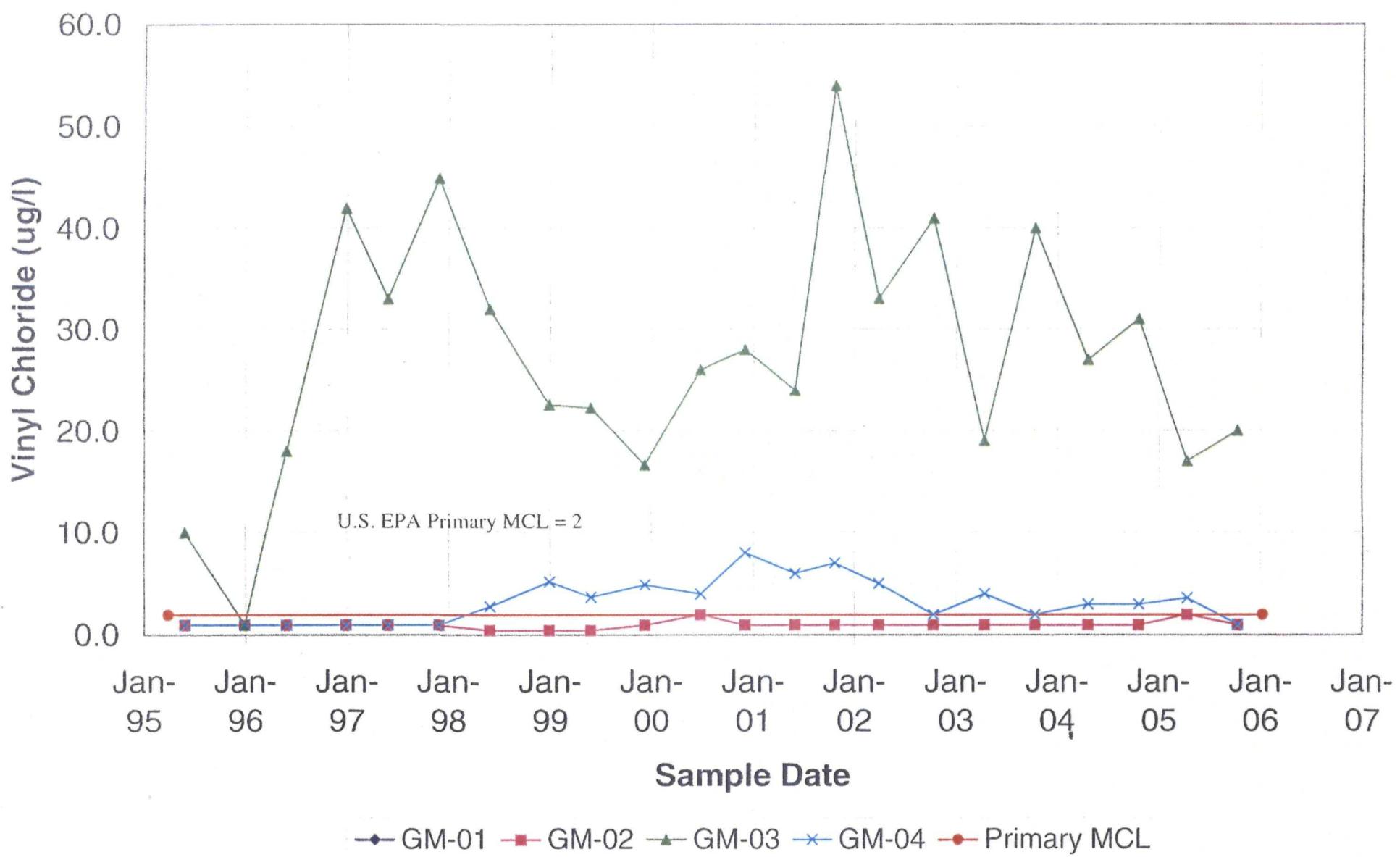
## 1,1,2-Trichloroethane Groundwater Concentrations WRR Facility, Columbia City, IN



## Trichloroethene Groundwater Concentrations WRR Facility, Columbia City, IN



## Vinyl Chloride Groundwater Concentrations WRR Facility, Columbia City, IN



**APPENDIX B**

**DATA VALIDATION REPORT**

**APPENDIX B**

**DATA VALIDATION REPORT**  
**SEMI-ANNUAL PROGRESS REPORT 21**  
**JULY THROUGH DECEMBER 2005**

**January 2006**

**Wayne Reclamation & Recycling**

Groundwater, air, and associated quality control (QC) samples were collected from the Wayne Reclamation & Recycling Site in Columbia City, Indiana between July and December 2005. The water samples were analyzed by Pace Analytical Services, Inc. (Pace) of Indianapolis, Indiana for one or more of the following parameters: volatile organic compounds (VOCs) by United States Environmental Protection Agency (U.S. EPA) Method SW-846 8260B; dissolved metals (arsenic, barium, cadmium, chromium, lead, nickel, and zinc) by U.S. EPA Method SW-846 6010B; total suspended solids (TSS) by U.S. EPA Method 160.2; ammonia by U.S. EPA Method 350.1; total Kjeldahl nitrogen (TKN) by U.S. EPA Method 351.2; nitrogen as nitrate and nitrite by U.S. EPA Method 353.2; total solids by U.S. EPA method 160.3; phosphorus by U.S. EPA Method 365.2; biological oxygen demand (BOD) by U.S. EPA Method 405.1; chemical oxygen demand by U.S. EPA Method 410.4; phenolics by U.S. EPA Method 420.2; polychlorinated biphenyls (PCBs) by U.S. EPA Method SW-846 8082; and total cyanide by U.S. EPA Method 335.3. The water samples were also analyzed by Pace of Lenexa, Kansas for oil and grease by U.S. EPA Method 1664 and surfactants by U.S. EPA Method 425.1. Additionally, air samples were analyzed for VOCs by Pace of Minneapolis, Minnesota by U.S. EPA Method TO-14.

Laboratory analytical results were evaluated in accordance with the U.S. EPA Contract Laboratory Program (CLP) National Functional Guidelines (NFG) for Organic Data Review (October 1999), U.S. EPA CLP NFG for Inorganic Data Review (October 2004), and the analytical methods. The analytical data were reviewed and qualified based on the results of the data evaluation parameters and/or the QC sample results provided by the laboratory.

The following summarizes the review of the analytical data that did not meet the QC criteria per sample delivery group (SDG):

SDG 5045627: The laboratory control sample (LCS) percent recovery associated with the volatile organic compound (VOC) analysis

of hexachloro-1,3-butadiene for samples GWINF and GWEFF was low. Therefore, the associated samples were flagged "J" as estimated for this compound.

SDG 5047629: The LCS percent recovery associated with the VOC analysis of hexachloro-1,3-butadiene for sample GWINF was low. Therefore, the associated sample was flagged "J" as estimated for this compound.

SDG 5048113: The laboratory indicated that the results for vinyl chloride and trans-1,2-dichloroethene associated with sample MW-9S exceeded the calibration range and a dilution was not conducted. Therefore, these results were qualified "J" as estimated.

SDG 1016699: The laboratory indicated that the continuing calibration (CC) associated with the VOC analysis of air sample AIREFF had percent recoveries outside the acceptance criteria for hexachloro-1,3-butadiene and 1,2,4-trichlorobenzene. The laboratory also indicated that the initial calibration (IC) associated with this sample was outside the acceptance criteria for trans-1,3-dichloropropane. Therefore, the associated sample was flagged "J" as estimated for these compounds.

SDG 1020930: The laboratory indicated that the CC associated with the VOC analysis of air sample AIREFF had a percent recovery outside the acceptance criteria for chloroform. The laboratory also indicated that the IC associated with this sample was outside the acceptance criteria for hexachloro-1,3-butadiene. Therefore, the associated sample was flagged "J" as estimated for these compounds.

The laboratory indicated that the results for cis-1,2-dichloroethane associated with sample AIREFF exceeded the calibration range and a dilution was not conducted. Therefore, this sample was qualified "J" as estimated.

SDG 1022017: The laboratory indicated that the IC recovery associated with the VOC analysis of air samples AIREFF; AIREF-FIELDDUP; SVE-GH; SVE-AF-AS-ON; and SVE-AF-AS-OFF had percent

recoveries outside the acceptance criteria for hexachloro-1,3-butadiene and trans-1,3-dichloropropene. The laboratory also indicated that the CC had percent recoveries outside the acceptance criteria for 1,3-dichlorobenzene and styrene. Therefore, the associated samples were flagged "J" as estimated for these compounds.

- SDG 1024566: The laboratory indicated that the IC associated with the VOC analysis of air samples AIREFF had a percent recovery outside the acceptance criteria for hexachloro-1,3-butadiene. Therefore, the associated samples were flagged "J" as estimated for this compound.

Based on the results of this data validation, all data are considered valid and complete as qualified.

**SUPPLEMENTAL - DATA VALIDATION REPORT  
SEMI-ANNUAL PROGRESS REPORT 21  
JANUARY 2006**

**Wayne Reclamation & Recycling**

One water sample was collected from the Wayne Reclamation site in Columbia City, Indiana, on January 13, 2006. The sample was analyzed by Pace Analytical Services, Inc., Indianapolis, Indiana, for volatile organic compounds (VOCs) by U.S. EPA method SW-846 8260B (SDG – 5050336). The analytical data were validated based on the results of the data evaluation parameters and/or the quality control (QC) sample results provided by the laboratory. Raw data was not reviewed. The following summarizes the review of the analytical data that did not meet the quality control criteria.

The laboratory control sample (LCS) associated with the sample indicated a high biased recovery for dichlorodifluoromethane. Since this is a high bias and the sample result was non-detect, qualification was not required.

Based on the results of this data validation, all data are considered valid and complete.

**APPENDIX C**

**SUMMARY OF MAJOR FIELD ACTIVITIES  
JULY THROUGH DECEMBER 2005**

## APPENDIX C

### **SUMMARY OF MAJOR FIELD ACTIVITIES JULY THROUGH DECEMBER2005**

#### **Wayne Reclamation & Recycling**

<b>Date</b>	<b>Description of Field Activities and Events as Provided by InSite</b>
July 2005	<ul style="list-style-type: none"><li>• Complete hydro survey and water levels. Collect GW samples. Collect air sample. Pack samples for shipment.</li><li>• Clean ground water collection line from SE and AST areas. Set pumps at RW-5 &amp; 8. Pull pump at RW-9, clean and set. Partial mowing.</li><li>• Maintenance - clean GW collection lines.</li><li>• Maintenance - switch blowers and check bleed valve operation.</li><li>• Make cooler to ship samples in. Pack samples and drop off at office for shipping.</li><li>• Adjust stripper air flow.</li><li>• Flow readings at RW-3 &amp; 5.</li><li>• Hydro-survey. Water levels. Mow.</li><li>• Mixed anti scale. Trim.</li><li>• Stop at shop for blades. Mowing.</li><li>• Switch SVE lines.</li><li>• Clean and work on pumps RW-3, 5 &amp; 8. Blow down AST and SE areas. Mow.</li><li>• Troubleshoot B-1 bleed valve malfunction. Pull pump and flow tube at RW-3 for cleaning. Switch blowers. Apply insecticide at RW-3 &amp; 5 shelters. Pull pump and flow tube at RW-5 &amp; 8. Test power feed to RW-8. Install new pitless gaskets at RW-5 &amp; 8. Install pump and flow tube at RW-3.</li></ul>
August 2005	<ul style="list-style-type: none"><li>• Check sampling gear for August sampling.</li><li>• Sample air and groundwater. Look at SE area Seriplex. Add oil to AC-1. Pack samples.</li><li>• Reduce data for July.</li><li>• Water levels. Seriplex work.</li><li>• Pack samples. Drop off for shipping.</li><li>• Mix anti-scale chemical. RW-3 &amp; 5 totalizer readings. Pump out dry sump adjust stripper air.</li><li>• Mix chemical. Switch SVE lines.</li><li>• Spray Round-up at site.</li></ul>

## APPENDIX C

### **SUMMARY OF MAJOR FIELD ACTIVITIES JULY THROUGH DECEMBER 2005**

#### **Wayne Reclamation & Recycling**

<b>Date</b>	<b>Description of Field Activities and Events as Provided by InSite (cont.)</b>
September 2005	<ul style="list-style-type: none"><li>• Clean main SVE filters. Work with blowers for appropriate air flow. Remove and clean filter from B-2. Install cleaned main filters. Zero cal SE area SVE PI. Clean pH meter and service electrode. Stock kit.</li><li>• Water levels.</li><li>• Check effluent sump for solids. Pump out dry sump.</li><li>• Maintenance - smart meter @ B-1 removed</li><li>• Maintenance - stripper tower cleaning, AST &amp; SVE air off</li><li>• Move tractor to WWR. Check effluent tank for accumulated solids.</li><li>• Order containers for semi-annual sampling.</li><li>• Sample air &amp; groundwater.</li><li>• Repair pitless at RW-4. Change flow meter program for all meters</li><li>• Mow around plant. Pull pump and clean at RW-3 &amp; 4. Set pump at RW-3.</li><li>• Clean out blower filters. Switch SVE lines.</li><li>• Well cleaning.</li><li>• Clean stripper.</li><li>• Receive chemical shipment. Switch SVE lines.</li></ul>

## APPENDIX C

### **SUMMARY OF MAJOR FIELD ACTIVITIES JULY THROUGH DECEMBER 2005**

#### **Wayne Reclamation & Recycling**

<b>Date</b>	<b>Description of Field Activities and Events as Provided by InSite (cont.)</b>
October 2005	<ul style="list-style-type: none"><li>• Check and adjust RW pump settings at time mark control. Adjust stripper air.</li><li>• Continue groundwater and air SVE sampling. Pack samples and ship.</li><li>• Finish sampling and maintenance.</li><li>• Finish SVE-3 sampling. Mix anti-scale solution. Pack remaining samples. Finish sample documentation.</li><li>• Pack samples for shipping.</li><li>• Sampling at WWR.</li><li>• Maintenance. Special project.</li><li>• Mow at WWR.</li><li>• Collect effluent air sample and duplicate. Collect SE area SVE-1 sample.</li><li>• Calibrate conductivity meter.</li><li>• Pack and ship WWR samples. Repair pitless adapter. Collect fitting to test blower filter pressure loss.</li><li>• Air sampling. Pack samples. Service pH electrode.</li><li>• Air sampling. Jeff Gore, USEPA &amp; Bruce Hamilton, IDEM at site.</li><li>• SE area SVE-2 sample. Sample municipal wells. Test blower filter loss. Pack samples.</li><li>• Set repaired pitless at RW-3. Calculate recent rate of flow.</li><li>• Set shelter at RW-5 and install revised flow meter settings. Blow down SEA groundwater collection line X2. Switch flow meter at RW-4.</li><li>• Work on flow meters at plant.</li><li>• Fill water bottles.</li><li>• Mix anti-scale batch.</li><li>• Mow. Sample water at plant. Check pressure at blower. Switch SVE lines. Pack samples for shipment.</li><li>• Pick up flex and fittings. Install flex and box at RW-5 for flow meter.</li><li>• Sample. RW-3 &amp; 5 totals and flows.</li><li>• Shut off SVE. Trim around plant and finish mowing. Clean up plant. Water levels. Sampling.</li><li>• Pack samples for shipping.</li></ul>

## APPENDIX C

### **SUMMARY OF MAJOR FIELD ACTIVITIES JULY THROUGH DECEMBER 2005**

#### **Wayne Reclamation & Recycling**

<b>Date</b>	<b>Description of Field Activities and Events as Provided by InSite (cont.)</b>
November 2005	<ul style="list-style-type: none"><li>• Adjust air stripper flow. Install 100 in. gauge at stripper. Mix anti-scale.</li><li>• Install filter pressure loss gauge.</li><li>• Maintenance - new coil installed in B-2 bleed valve. Switched to B-1. Heat turned on at RW-3 &amp; 5. Checked heat trace at POTW.</li><li>• Maintenance - pipeline relocation at POTW</li><li>• Maintenance - Seriplex programming</li><li>• Repair hose for RW-3 &amp; 5.</li><li>• SE area water levels. Sample air and groundwater.</li><li>• Test all transducers in SE area.</li><li>• Install filter pressure loss gauge.</li><li>• Found Seriplex in SE area down.</li><li>• Mix anti-scale batch. Test SE area seriplex.</li><li>• SE area water levels. Sample air and groundwater. Remove actuator for SE Area SVE flow. SVE and AS now off.</li><li>• SE area water levels. Switch and test blower control panels.</li><li>• Switch blowers. Installed heaters in RW-3 &amp; 5. Check heat trace at POTW.</li><li>• Switch blowers. Start heaters at RW-3 &amp; 5. Check Seriplex.</li><li>• Totalizer readings from RW-3 &amp; 5. Check pressure difference at main filter and blower.</li></ul>
December 2005	<ul style="list-style-type: none"><li>• Clean flow meter from AST area. Pulled and cleaned RW-4 pump. Pulled and changed out RW-3 pump. Blow down AST area collection line to plant. Installed transducer at RW-6. SE area water levels. Started cleaning RW-3 pump.</li><li>• Found effluent totalizer locked. Rest to zero and working properly.</li><li>• Maintenance - Clean both blower filters.</li><li>• Maintenance - Clean pumps @ RW-3 &amp; 4. Calibrate transducer @ RW-6.</li><li>• Pull pump @ RW-4. Clean and set. Complete air and groundwater sampling.</li><li>• Mix anti-scale. Wash and dry both blower filters and install in plant.</li><li>• Wash anti-scale tank. Mixed anti-scale. Adjusted TimeMark controls.</li></ul>

## **APPENDIX D**

### **SUMMARY OF AIR DISPERSION MODELING AND CUMULATIVE CANCER RISK CALCULATIONS**

## **APPENDIX D**

### **SUMMARY OF AIR DISPERSION MODELING AND CUMULATIVE CANCER RISK CALCULATIONS**

#### **Wayne Reclamation & Recycling**

The following summarizes the air modeling conducted by MWH Americas, Inc. for the Wayne Reclamation & Recycling (WRR) site in Columbia City, Indiana to assess the maximum annual average ground-level concentration (GLC) that could occur at any point outside the perimeter of the WRR site. Descriptions of the model, modeling procedures, and the results are provided below.

#### **AIR DISPERSION MODELING PROCEDURES**

The modeling was performed by utilizing the United States Environmental Protection Agency (U.S. EPA) model Industrial Source Complex – Long-Term (ISC-LT) to evaluate the ambient air impact of emissions from the site. Dispersion modeling was conducted on both the air treatment system influent and effluent in order to compare the risks associated with both treated and untreated air.

#### **Meteorological Data**

Meteorological data from 1985 was entered into the model for the Columbia City, Indiana region. Model output is highly sensitive to such data, as changes in atmospheric conditions will directly affect the ability of a discharged pollutant to disperse in the surrounding air. Meteorological data such as wind speed, wind direction, urban and rural mixing heights, Pasquill Stability Classifications (rated A to G, with G being the most stable), and ambient air temperature were converted into a binary data package. The package was then loaded into the ISC-LT model. The model then evaluated these conditions with the remaining model input parameters to identify which combinations of these conditions would result in maximum GLC of pollutants.

#### **Emissions Source Data**

The following data represents the emissions parameters at the WRR site that were entered into the model:

Stack Height	9.1 meters
Stack Diameter	0.4064 meters
Stack Base Elevation	6.1 meters
Exhaust Temperature	73° C
Gas Exit Velocity	13.08 meters per second
Volumetric Flow Rate	1.7 cubic meters per second
Influent/Effluent Concentrations	Sampling events (See Table 14, Progress Rpt. 3. Current data is provided in Table 13 of this report.)
Terrain	Flat
Dispersion Coefficients	Rural
Final Plume Rise	On
Stack-tip Downwash	On
Receptor Height	0 meters

### **Modeling Procedure**

A grid was established to describe the relationship of the emission source with its surroundings, including the location of the site boundaries and any potential receptors. A cartesian grid was established around the site to determine GLC locations.

### **HUMAN HEALTH RISK ASSESSMENT**

The maximum concentrations determined by the air modeling study were multiplied by unit risk factors (URFs) to obtain the excess carcinogenic risk posed by the emissions through the inhalation route. The URFs used in this study were developed from toxicity values included in U.S. EPA's Integrated Risk Information System (IRIS), U.S. EPA's "Health Assessment Summary Tables" (HEAST, Annual FY-1995), and information provided by the U.S. EPA Environmental Criteria Assessment Office. The URFs assume a chronic exposure to the carcinogenic chemicals for 24 hours a day, 365 days a year, for 70 years. The URFs for the constituents of concern are:

Vinyl chloride -	7.80E-05
1,1-Dichloroethane -	1.63E-08
Trichloroethene -	2.00E-06
Tetrachloroethene -	5.90E-06

The excess cancer risk (ECR) to the maximally exposed individual can be calculated by multiplying the URF by the ambient concentration of the chemical in question. In a residential zone, the maximally-exposed individual is assumed to be continuously exposed to the chemical for 70 years.

The maximum individual excess cancer risk (MICR) to the maximally-exposed individual due to air toxic emissions from the WRR site was calculated by multiplying the appropriate risk factor (URF) by the maximum annual GLC at the maximally-exposed individual:

$$\text{MICR} = \text{URF} * \text{GLC}$$

A summary of these calculations using concentrations generated from the model output is provided in Table 14 of Progress Report 3, and current calculations are provided in Table 14 of this progress report. An example model input/output is attached.

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On June 24, 1999, air treatment was discontinued; however, monthly air sampling continues to be conducted on the effluent air stream as a means of monitoring potential risk levels associated with the untreated air stream. Effluent air sampling conducted since discontinuation of air treatment indicates the  $1 \times 10^{-6}$  action level has not been exceeded, with one minor exception of August 2005 (exceeded by  $0.05 \times 10^{-6}$ ). This was due to a slight increase in the vinyl chloride concentration noted in the system effluent air stream during that month's sampling.

CO STARTING  
 CO TITLEONE Fort Wayne Reclamation Site, 30 ft stack  
 CO MODELOPT DEFAULT CONC RURAL  
 CO AVERTIME ANNUAL  
 CO POLLUTID OTHER  
 CO DCAYCOEF .000000  
 CO RUNORNOT RUN  
 CO ERROREFIL ERRORS.OUT  
 CO FINISHED  
  
 SO STARTING  
 \*\* Source Location Cards:  
 \*\* SRCID SRCTYP XS YS ZS  
 SO LOCATION 1 POINT 0.000 0.000 0.000  
  
 \*\* Source Parameter Cards:  
 \*\* POINT: SRCID QS HS TS VS DS  
 \*\* VOLUME: SRCID QS HS SYINIT SZINIT  
 \*\* AREA: SRCID QS HS XINIT  
  
 SO SRCPARAM 1 0.007 9.1440 293.15 7.5 1.0000  
 SO EMISUNIT .100000E+07 (GRAMS/SEC) (MICROGRAMS/CUBIC-METER)  
 SO SRCGROUP ALL  
 SO FINISHED  
  
 RE STARTING  
 RE DISCCART -241 116  
 RE DISCCART -239 -85  
 RE DISCCART -239 -45  
 RE DISCCART -239 -5  
 RE DISCCART -239 35  
 RE DISCCART -239 75  
 RE DISCCART -204 -86  
 RE DISCCART -198 114  
 RE DISCCART -169 86  
 RE DISCCART -155 112  
 RE DISCCART -134 -86  
 RE DISCCART -112 110  
 RE DISCCART -89 -91  
 RE DISCCART -70 181  
 RE DISCCART -69 144  
 RE DISCCART -68 107  
 RE DISCCART -45 -95  
 RE DISCCART -27 181  
 RE DISCCART -1 -99  
 RE DISCCART 16 181  
 RE DISCCART 43 -103  
 RE DISCCART 59 181  
 RE DISCCART 70 -111  
 RE DISCCART 97 -119  
 RE DISCCART 102 183  
 RE DISCCART 102 231  
 RE DISCCART 123 -133  
 RE DISCCART 142 231  
 RE DISCCART 149 -146  
 RE DISCCART 182 231  
 RE DISCCART 184 -145  
 RE DISCCART 202 -137  
 RE DISCCART 209 -116  
 RE DISCCART 215 -69  
 RE DISCCART 221 -31  
 RE DISCCART 222 231  
 RE DISCCART 227 7  
 RE DISCCART 223 45  
 RE DISCCART 242 91  
 RE DISCCART 251 136

RE DISCCART 260 181  
RE DISCCART 262 207  
RE DISCCART 264 232  
RE DISCCART -900 -800  
RE DISCCART -900 -700  
RE DISCCART -900 -600  
RE DISCCART -900 -500  
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RE DISCCART -900 -300  
RE DISCCART -900 -200  
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RE DISCCART -900 300  
RE DISCCART -900 400  
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RE DISCCART -700 0  
RE DISCCART -700 100  
RE DISCCART -700 200  
RE DISCCART -700 300  
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RE FINISHED

ME STARTING
ME INPUTFIL METFIL.STR FREE
ME ANEMHGHT 10.00 METERS
ME SURFDATA 14827 1985      SURFNAME
ME UAIRDATA 13840 1985      UAIRNAME
ME STARDATA ANNUAL
ME AVESPEED 1.54 3.09 3.95 5.14 8.23 10.80
ME AVETEMPS ANNUAL 280 280 280 280 280 280
ME AVEMIXHT ANNUAL A 440 440 440 440 440 440
ME AVEMIXHT ANNUAL B 440 440 440 440 440 440
ME AVEMIXHT ANNUAL C 440 440 440 440 440 440
ME AVEMIXHT ANNUAL D 440 440 440 440 440 440
ME AVEMIXHT ANNUAL E 440 440 440 440 440 440
ME AVEMIXHT ANNUAL F 440 440 440 440 440 440
ME FINISHED

OU STARTING
OU RECTABLE SRCGRP
OU FINISHED

*****  
*** SETUP Finishes Successfully ***  
*****
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\*\*\* ISCLT3 - VERSION 95250 \*\*\*      \*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC      RURAL      FLAT      DFAULT

\*\*\* POINT SOURCE DATA \*\*\*

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (USER UNITS)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	E
1	0	.70000E-02	.0	.0	.0	.0	9.14	293.15

\*\*\* ISCLT3 - VERSION 95250 \*\*\*     \*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC    RURAL    FLAT                DFAULT

\*\*\* SOURCE IDs DEFINING SOURCE GROUPS

GROUP ID	SOURCE IDs
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ALL	1
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\*\*\* ISCLT3 - VERSION 95250 \*\*\*     \*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC   RURAL   FLAT                DFAULT

\*\*\* DISCRETE CARTESIAN RECEPTORS \*\*  
(X-COORD, Y-COORD, ZELEV, ZFLAG)  
(METERS)

(	-241.0,	116.0,	.0,	.0);	(	-239.0,	-85.
)	-239.0,	-45.0,	.0,	.0);	)	-239.0,	-5.
(	-239.0,	35.0,	.0,	.0);	(	-239.0,	75.
)	-204.0,	-86.0,	.0,	.0);	(	-198.0,	114.
(	-169.0,	-86.0,	.0,	.0);	(	-155.0,	112.
)	-134.0,	-86.0,	.0,	.0);	(	-112.0,	110.
(	-89.0,	-91.0,	.0,	.0);	(	-70.0,	181.
)	-69.0,	144.0,	.0,	.0);	(	-68.0,	107.
(	-45.0,	-95.0,	.0,	.0);	(	-27.0,	181.
)	-1.0,	-99.0,	.0,	.0);	(	16.0,	181.
(	43.0,	-103.0,	.0,	.0);	(	59.0,	181.
)	70.0,	-111.0,	.0,	.0);	(	97.0,	-119.
(	102.0,	183.0,	.0,	.0);	(	102.0,	231.
)	123.0,	-133.0,	.0,	.0);	(	142.0,	231.
(	149.0,	-146.0,	.0,	.0);	(	182.0,	231.
)	184.0,	-145.0,	.0,	.0);	(	202.0,	-137.
(	209.0,	-116.0,	.0,	.0);	(	215.0,	-69.
)	221.0,	-31.0,	.0,	.0);	(	222.0,	231.
(	227.0,	7.0,	.0,	.0);	(	223.0,	45.
)	242.0,	91.0,	.0,	.0);	(	251.0,	136.
(	260.0,	181.0,	.0,	.0);	(	262.0,	207.
)	264.0,	232.0,	.0,	.0);	(	-900.0,	-800.
(	-900.0,	-700.0,	.0,	.0);	(	-900.0,	-600.
)	-900.0,	-500.0,	.0,	.0);	(	-900.0,	-400.
(	-900.0,	-300.0,	.0,	.0);	(	-900.0,	-200.
)	-900.0,	-100.0,	.0,	.0);	(	-900.0,	.
(	-900.0,	100.0,	.0,	.0);	(	-900.0,	200.
)	-900.0,	300.0,	.0,	.0);	(	-900.0,	400.
(	-900.0,	500.0,	.0,	.0);	(	-900.0,	600.
)	-900.0,	700.0,	.0,	.0);	(	-900.0,	800.
(	-900.0,	900.0,	.0,	.0);	(	-800.0,	-800.
)	-800.0,	-700.0,	.0,	.0);	(	-800.0,	-600.
(	-800.0,	-500.0,	.0,	.0);	(	-800.0,	-400.
)	-800.0,	-300.0,	.0,	.0);	(	-800.0,	-200.
(	-800.0,	-100.0,	.0,	.0);	(	-800.0,	.
)	-800.0,	100.0,	.0,	.0);	(	-800.0,	200.
(	-800.0,	300.0,	.0,	.0);	(	-800.0,	400.
)	-800.0,	500.0,	.0,	.0);	(	-800.0,	600.
(	-800.0,	700.0,	.0,	.0);	(	-800.0,	800.
)	-800.0,	900.0,	.0,	.0);	(	-700.0,	-800.
(	-700.0,	-700.0,	.0,	.0);	(	-700.0,	-600.
)	-700.0,	-500.0,	.0,	.0);	(	-700.0,	-400.
(	-700.0,	-300.0,	.0,	.0);	(	-700.0,	-200.
)	-700.0,	-100.0,	.0,	.0);	(	-700.0,	.
(	-700.0,	100.0,	.0,	.0);	(	-700.0,	200.

\*\*\* ISCLT3 - VERSION 95250 \*\*\*      \*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC   RURAL   FLAT                    DFAULT

\*\*\* DISCRETE CARTESIAN RECEPTORS \*\*  
(X-COORD, Y-COORD, ZELEV, ZFLAG)  
(METERS)

{	-700.0,	300.0,	.0,	.0);	{	-700.0,	400.
{	-700.0,	500.0,	.0,	.0);	{	-700.0,	600.
{	-700.0,	700.0,	.0,	.0);	{	-700.0,	800.
{	-700.0,	900.0,	.0,	.0);	{	-600.0,	-800.
{	-600.0,	-700.0,	.0,	.0);	{	-600.0,	-600.
{	-600.0,	-500.0,	.0,	.0);	{	-600.0,	-400.
{	-600.0,	-300.0,	.0,	.0);	{	-600.0,	-200.
{	-600.0,	-100.0,	.0,	.0);	{	-600.0,	.
{	-600.0,	100.0,	.0,	.0);	{	-600.0,	200.
{	-600.0,	300.0,	.0,	.0);	{	-600.0,	400.
{	-600.0,	500.0,	.0,	.0);	{	-600.0,	400.
{	-600.0,	300.0,	.0,	.0);	{	-600.0,	500.
{	-600.0,	600.0,	.0,	.0);	{	-600.0,	700.
{	-600.0,	800.0,	.0,	.0);	{	-600.0,	900.
{	-500.0,	-800.0,	.0,	.0);	{	-500.0,	-700.
{	-500.0,	-600.0,	.0,	.0);	{	-500.0,	-500.
{	-500.0,	-400.0,	.0,	.0);	{	-500.0,	-300.
{	-500.0,	-200.0,	.0,	.0);	{	-500.0,	-100.
{	-500.0,	.0,	.0,	.0);	{	-500.0,	100.
{	-500.0,	200.0,	.0,	.0);	{	-500.0,	300.
{	-500.0,	400.0,	.0,	.0);	{	-500.0,	300.
{	-500.0,	200.0,	.0,	.0);	{	-500.0,	100.
{	-500.0,	200.0,	.0,	.0);	{	-500.0,	300.
{	-500.0,	400.0,	.0,	.0);	{	-500.0,	500.
{	-500.0,	600.0,	.0,	.0);	{	-500.0,	700.
{	-500.0,	800.0,	.0,	.0);	{	-500.0,	900.
{	-400.0,	-800.0,	.0,	.0);	{	-400.0,	-700.
{	-400.0,	-600.0,	.0,	.0);	{	-400.0,	-500.
{	-400.0,	-400.0,	.0,	.0);	{	-400.0,	-300.
{	-400.0,	-200.0,	.0,	.0);	{	-400.0,	-100.
{	-400.0,	.0,	.0,	.0);	{	-400.0,	100.
{	-400.0,	200.0,	.0,	.0);	{	-400.0,	300.
{	-400.0,	400.0,	.0,	.0);	{	-400.0,	500.
{	-400.0,	600.0,	.0,	.0);	{	-400.0,	700.
{	-400.0,	800.0,	.0,	.0);	{	-400.0,	900.
{	-300.0,	-800.0,	.0,	.0);	{	-300.0,	-700.
{	-300.0,	-600.0,	.0,	.0);	{	-300.0,	-500.
{	-300.0,	-400.0,	.0,	.0);	{	-300.0,	-300.
{	-300.0,	-200.0,	.0,	.0);	{	-300.0,	-100.
{	-300.0,	.0,	.0,	.0);	{	-300.0,	100.
{	-300.0,	200.0,	.0,	.0);	{	-300.0,	300.
{	-300.0,	400.0,	.0,	.0);	{	-300.0,	500.
{	-300.0,	600.0,	.0,	.0);	{	-300.0,	700.
{	-300.0,	800.0,	.0,	.0);	{	-300.0,	900.
{	-200.0,	-800.0,	.0,	.0);	{	-200.0,	-700.

\*\*\* ISCLT3 - VERSION 95250 \*\*\*     \*\*\* Fort Wayne Reclamation Site, 30 ft stack

\*\*\*

\*\*\* MODELING OPTIONS USED: CONC   RURAL   FLAT                    DFAULT

\*\*\* DISCRETE CARTESIAN RECEPTORS \*\*  
(X-COORD, Y-COORD, ZELEV, ZFLAG)  
(METERS)

{	-200.0,	-600.0,	.0,	.0);	{	-200.0,	-500.
{	-200.0,	-400.0,	.0,	.0);	{	-200.0,	-300.
{	-200.0,	-200.0,	.0,	.0);	{	-200.0,	-100.
{	-200.0,	.0,	.0,	.0);	{	-200.0,	100.
{	-200.0,	200.0,	.0,	.0);	{	-200.0,	300.
{	-200.0,	400.0,	.0,	.0);	{	-200.0,	500.
{	-200.0,	600.0,	.0,	.0);	{	-200.0,	700.
{	-200.0,	800.0,	.0,	.0);	{	-200.0,	900.
{	-100.0,	-800.0,	.0,	.0);	{	-100.0,	-700.
{	-100.0,	-600.0,	.0,	.0);	{	-100.0,	-500.
{	-100.0,	-400.0,	.0,	.0);	{	-100.0,	-300.
{	-100.0,	-200.0,	.0,	.0);	{	-100.0,	-100.
{	-100.0,	.0,	.0,	.0);	{	-100.0,	100.
{	-100.0,	200.0,	.0,	.0);	{	-100.0,	300.
{	-100.0,	400.0,	.0,	.0);	{	-100.0,	500.
{	-100.0,	600.0,	.0,	.0);	{	-100.0,	700.
{	-100.0,	800.0,	.0,	.0);	{	-100.0,	900.
{	.0,	-800.0,	.0,	.0);	{	.0,	-700.
{	.0,	-600.0,	.0,	.0);	{	.0,	-500.
{	.0,	-400.0,	.0,	.0);	{	.0,	-300.
{	.0,	-200.0,	.0,	.0);	{	.0,	-100.
{	.0,	-200.0,	.0,	.0);	{	.0,	-100.
{	.0,	.0,	.0,	.0);	{	.0,	100.
{	.0,	200.0,	.0,	.0);	{	.0,	300.
{	.0,	400.0,	.0,	.0);	{	.0,	500.
{	.0,	600.0,	.0,	.0);	{	.0,	700.
{	.0,	800.0,	.0,	.0);	{	.0,	900.
{	100.0,	-800.0,	.0,	.0);	{	100.0,	-700.
{	100.0,	-600.0,	.0,	.0);	{	100.0,	-500.
{	100.0,	-400.0,	.0,	.0);	{	100.0,	-300.
{	100.0,	-200.0,	.0,	.0);	{	100.0,	-100.
{	100.0,	.0,	.0,	.0);	{	100.0,	100.
{	100.0,	200.0,	.0,	.0);	{	100.0,	300.
{	100.0,	400.0,	.0,	.0);	{	100.0,	500.
{	100.0,	600.0,	.0,	.0);	{	100.0,	700.
{	100.0,	800.0,	.0,	.0);	{	100.0,	900.
{	200.0,	-800.0,	.0,	.0);	{	200.0,	-700.
{	200.0,	-600.0,	.0,	.0);	{	200.0,	-500.
{	200.0,	-400.0,	.0,	.0);	{	200.0,	-300.
{	200.0,	-200.0,	.0,	.0);	{	200.0,	-100.
{	200.0,	.0,	.0,	.0);	{	200.0,	100.
{	200.0,	200.0,	.0,	.0);	{	200.0,	300.
{	200.0,	400.0,	.0,	.0);	{	200.0,	500.
{	200.0,	600.0,	.0,	.0);	{	200.0,	700.
{	200.0,	800.0,	.0,	.0);	{	200.0,	900.

\*\*\* ISCLT3 - VERSION 95250 \*\*\*      \*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC RURAL FLAT      DEFAULT

\*\*\* DISCRETE CARTESIAN RECEPTORS \*\*  
(X-COORD, Y-COORD, ZELEV, ZFLAG)  
(METERS)

(	300.0,	-800.0,	.0,	.0);	(	300.0,	-700.
(	300.0,	-600.0,	.0,	.0);	(	300.0,	-500.
(	300.0,	-400.0,	.0,	.0);	(	300.0,	-300.
(	300.0,	-200.0,	.0,	.0);	(	300.0,	-100.
(	300.0,	.0,	.0,	.0);	(	300.0,	100.
(	300.0,	200.0,	.0,	.0);	(	300.0,	300.
(	300.0,	400.0,	.0,	.0);	(	300.0,	500.
(	300.0,	600.0,	.0,	.0);	(	300.0,	700.
(	300.0,	800.0,	.0,	.0);	(	300.0,	900.
(	400.0,	-800.0,	.0,	.0);	(	400.0,	-700.
(	400.0,	-600.0,	.0,	.0);	(	400.0,	-500.
(	400.0,	-400.0,	.0,	.0);	(	400.0,	-300.
(	400.0,	-200.0,	.0,	.0);	(	400.0,	-100.
(	400.0,	.0,	.0,	.0);	(	400.0,	100.
(	400.0,	200.0,	.0,	.0);	(	400.0,	300.
(	400.0,	400.0,	.0,	.0);	(	400.0,	500.
(	400.0,	600.0,	.0,	.0);	(	400.0,	700.
(	400.0,	800.0,	.0,	.0);	(	400.0,	900.
(	500.0,	-800.0,	.0,	.0);	(	500.0,	-700.
(	500.0,	-600.0,	.0,	.0);	(	500.0,	-500.
(	500.0,	-400.0,	.0,	.0);	(	500.0,	-300.
(	500.0,	-200.0,	.0,	.0);	(	500.0,	-100.
(	500.0,	.0,	.0,	.0);	(	500.0,	100.
(	500.0,	200.0,	.0,	.0);	(	500.0,	300.
(	500.0,	400.0,	.0,	.0);	(	500.0,	500.
(	500.0,	600.0,	.0,	.0);	(	500.0,	700.
(	500.0,	800.0,	.0,	.0);	(	500.0,	900.
(	600.0,	-800.0,	.0,	.0);	(	600.0,	-700.
(	600.0,	-600.0,	.0,	.0);	(	600.0,	-500.
(	600.0,	-400.0,	.0,	.0);	(	600.0,	-300.
(	600.0,	-200.0,	.0,	.0);	(	600.0,	-100.
(	600.0,	.0,	.0,	.0);	(	600.0,	100.
(	600.0,	200.0,	.0,	.0);	(	600.0,	300.
(	600.0,	400.0,	.0,	.0);	(	600.0,	500.
(	600.0,	600.0,	.0,	.0);	(	600.0,	700.
(	600.0,	800.0,	.0,	.0);	(	600.0,	900.
(	700.0,	-700.0,	.0,	.0);	(	700.0,	-600.
(	700.0,	-500.0,	.0,	.0);	(	700.0,	-400.
(	700.0,	-300.0,	.0,	.0);	(	700.0,	-200.
(	700.0,	-100.0,	.0,	.0);	(	700.0,	
(	700.0,	100.0,	.0,	.0);	(	700.0,	200.
(	700.0,	300.0,	.0,	.0);	(	700.0,	400.
(	700.0,	500.0,	.0,	.0);	(	700.0,	600.
(	700.0,	700.0,	.0,	.0);	(	700.0,	800.

\*\*\* ISCLT3 - VERSION 95250 \*\*\*      \*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC    RURAL    FLAT                DEFAULT

\*\*\* DISCRETE CARTESIAN RECEPATORS \*\*  
(X-COORD, Y-COORD, ZELEV, ZFLAG)  
(METERS)

(	700.0,	900.0,	.0,	.0);	(	800.0,	-600.
(	800.0,	-500.0,	.0,	.0);	(	800.0,	-400.
(	800.0,	-300.0,	.0,	.0);	(	800.0,	-200.
(	800.0,	-100.0,	.0,	.0);	(	800.0,	.
(	800.0,	100.0,	.0,	.0);	(	800.0,	200.
(	800.0,	300.0,	.0,	.0);	(	800.0,	400.
(	800.0,	500.0,	.0,	.0);	(	800.0,	600.
(	800.0,	700.0,	.0,	.0);	(	800.0,	800.
(	900.0,	-300.0,	.0,	.0);	(	900.0,	-200.
(	900.0,	-100.0,	.0,	.0);	(	900.0,	.
(	900.0,	100.0,	.0,	.0);	(	900.0,	200.
(	900.0,	300.0,	.0,	.0);	(	900.0,	400.
(	900.0,	500.0,	.0,	.0);	(	900.0,	600.

\*\*\* ISCLT3 - VERSION 95250 \*\*\*      \*\*\* Fort Wayne Reclamation Site, 30 ft stack

\*\*\*

\*\*\* MODELING OPTIONS USED: CONC    RURAL    FLAT                DFAULT

\* SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY  
LESS THAN 1.0 METER OR 3\*ZLB IN DISTANCE, OR WITHIN 0

SOURCE ID	RECEPTOR LOCATION	
	XR (METERS)	YR (METERS)
1	.0	.0

\*\*\* ISCLT3 - VERSION 95250 \*\*\*      \*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC RURAL FLAT      DFAULT

\*\*\* AVERAGE SPEED FOR EACH WIND SPEED CA  
(METERS/SEC)

1.54,    3.09,    3.95,    5.14,    8.2

\*\*\* WIND PROFILE EXPONENTS \*\*

STABILITY CATEGORY	WIND SPEED CATEGORY			
	1	2	3	4
A	.70000E-01	.70000E-01	.70000E-01	.7000
B	.70000E-01	.70000E-01	.70000E-01	.7000
C	.10000E+00	.10000E+00	.10000E+00	.1000
D	.15000E+00	.15000E+00	.15000E+00	.1500
E	.35000E+00	.35000E+00	.35000E+00	.3500
F	.55000E+00	.55000E+00	.55000E+00	.5500

\*\*\* VERTICAL POTENTIAL TEMPERATURE GRA  
(DEGREES KELVIN PER METER)

STABILITY CATEGORY	WIND SPEED CATEGORY			
	1	2	3	4
A	.00000E+00	.00000E+00	.00000E+00	.0000
B	.00000E+00	.00000E+00	.00000E+00	.0000
C	.00000E+00	.00000E+00	.00000E+00	.0000
D	.00000E+00	.00000E+00	.00000E+00	.0000
E	.20000E-01	.20000E-01	.20000E-01	.2000
F	.35000E-01	.35000E-01	.35000E-01	.3500

\*\*\* AVERAGE AMBIENT AIR TEMPERATURE (KEL

STABILITY CATEGORY A	STABILITY CATEGORY B	STABILITY CATEGORY C	STABILITY CATEGORY D	C
ANNUAL	280.0000	280.0000	280.0000	280.0000

\*\*\* ISCLT3 - VERSION 95250 \*\*\*     \*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC RURAL FLAT DEFAULT

\*\*\* AVERAGE MIXING LAYER HEIGHT (METERS) \*\*

	WIND SPEED CATEGORY 1	WIND SPEED CATEGORY 2	WIND SPEED CATEGORY 3	ANNUAL WTND SPEED CATEGORY 4
STABILITY CATEGORY A	440.0000	440.0000	440.0000	440.0000
STABILITY CATEGORY B	440.0000	440.0000	440.0000	440.0000
STABILITY CATEGORY C	440.0000	440.0000	440.0000	440.0000
STABILITY CATEGORY D	440.0000	440.0000	440.0000	440.0000
STABILITY CATEGORY E	440.0000	440.0000	440.0000	440.0000
STABILITY CATEGORY F	440.0000	440.0000	440.0000	440.0000

\*\*\* ISCLT3 - VERSION 95250 \*\*\*      \*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC RURAL FLAT DEFAULT

\*\*\* FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY \*

FILE: METFIL.STR  
SURFACE STATION NO.: 14827  
NAME: SURFNAME  
YEAR: 1985

FORMAT: FREE  
UPPER AIR STATION NO.  
NAME  
YEAR

**ANNUAL: STABILITY CATEGORY A**

**ANNUAL: STABILITY CATEGORY B**

\*\*\* ISCLT3 - VERSION 95250 \*\*\*      \*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC RURAL FLAT      DEFAULT

\*\*\* FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY \*

FILE: METFIL.STR

FORMAT: FREE

SURFACE STATION NO.: 14827

UPPER AIR STATION NO.

NAME: SURFNAME

NAME

YEAR: 1985

YEAR

ANNUAL: STABILITY CATEGORY C

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 ( 1.540 M/S)	WIND SPEED CATEGORY 2 ( 3.090 M/S)	WIND SPEED CATEGORY 3 ( 3.950 M/S)	WIND SPEED CATEGORY 4 ( 5.140 M/S)	WIND SPEED CATEGORY 5 ( 8.230 M/S)	W C
.000	.00000000	.00000000	.00000000	.00000000	.00000000	
22.500	.00000000	.00000000	.00000000	.00000000	.00000000	
45.000	.00000000	.00000000	.00000000	.00000000	.00000000	
67.500	.00000000	.00000000	.00000000	.00000000	.00000000	
90.000	.00000000	.00000000	.00000000	.00000000	.00000000	
112.500	.00000000	.00000000	.00000000	.00000000	.00000000	
135.000	.00000000	.00000000	.00000000	.00000000	.00000000	
157.500	.00000000	.00000000	.00000000	.00000000	.00000000	
180.000	.00000000	.00000000	.00000000	.00000000	.00000000	
202.500	.00000000	.00000000	.00000000	.00000000	.00000000	
225.000	.00000000	.00000000	.00000000	.00000000	.00000000	
247.500	.00000000	.00000000	.00000000	.00000000	.00000000	
270.000	.00000000	.00000000	.00000000	.00000000	.00000000	
292.500	.00000000	.00000000	.00000000	.00000000	.00000000	
315.000	.00000000	.00000000	.00000000	.00000000	.00000000	
337.500	.00000000	.00000000	.00000000	.00000000	.00000000	

ANNUAL: STABILITY CATEGORY D

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 ( 1.540 M/S)	WIND SPEED CATEGORY 2 ( 3.090 M/S)	WIND SPEED CATEGORY 3 ( 3.950 M/S)	WIND SPEED CATEGORY 4 ( 5.140 M/S)	WIND SPEED CATEGORY 5 ( 8.230 M/S)	W C
.000	.00067300	.00807100	.01059300	.00588500	.00000000	
22.500	.00056000	.00739800	.00420300	.00218600	.00000000	
45.000	.00056000	.00504400	.00689400	.00353100	.00000000	
67.500	.00056000	.00739800	.01193800	.00655700	.00067300	
90.000	.00201800	.01412300	.02135300	.01227400	.00100900	
112.500	.00168100	.00739800	.00723000	.00252200	.00000000	
135.000	.00302600	.00874300	.00588500	.00151300	.00000000	
157.500	.00302600	.01008800	.00674200	.00151300	.00000000	
180.000	.00403500	.01345100	.01462800	.00689400	.00050400	
202.500	.00269000	.01244200	.01368600	.00790200	.00084100	
225.000	.00336300	.01513200	.02377400	.01731800	.00302600	
247.500	.00201800	.01042400	.01704900	.01395500	.00336300	
270.000	.00168100	.01412300	.02209300	.02471600	.00605300	
292.500	.00067300	.00773400	.01025600	.00790200	.00067300	
315.000	.00067300	.00739800	.01025600	.00823900	.00067300	
337.500	.00067300	.00739800	.00958400	.00622100	.00033600	

\*\*\* ISCLT3 - VERSION 95250 \*\*\*     \*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC RURAL FLAT                    DFAULT

\*\*\* FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY \*

FILE: METFIL.STR    FORMAT: FREE  
SURFACE STATION NO.: 14827                                        UPPER AIR STATION NO.  
    NAME  
    YEAR  
    NAME  
    YEAR

ANNUAL: STABILITY CATEGORY E

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 ( 1.540 M/S)	WIND SPEED CATEGORY 2 ( 3.090 M/S)	WIND SPEED CATEGORY 3 ( 3.950 M/S)	WIND SPEED CATEGORY 4 ( 5.140 M/S)	WIND SPEED CATEGORY 5 ( 8.230 M/S)	W C (1)
.000	.00029200	.00350200	.00459700	.00255400	.00000000	
22.500	.00024300	.00321000	.00182400	.00094900	.00000000	
45.000	.00024300	.00218900	.00299200	.00153200	.00000000	
67.500	.00024300	.00321000	.00518000	.00284600	.00029200	
90.000	.00087600	.00612900	.00926700	.00532600	.00043800	
112.500	.00073000	.00321000	.00313700	.00109400	.00000000	
135.000	.00131300	.00379400	.00255400	.00065700	.00000000	
157.500	.00131300	.00437800	.00292600	.00065700	.00000000	
180.000	.00175100	.00583700	.00634800	.00299200	.00021900	
202.500	.00116700	.00539900	.00593900	.00342900	.00036500	
225.000	.00145900	.00656700	.01031700	.00751500	.00131300	
247.500	.00087600	.00452400	.00739900	.00605600	.00145900	
270.000	.00073000	.00612900	.00958800	.01072600	.00262700	
292.500	.00029200	.00335600	.00445100	.00342900	.00029200	
315.000	.00029200	.00321000	.00445100	.00357500	.00029200	
337.500	.00029200	.00321000	.00415900	.00270000	.00014600	

ANNUAL: STABILITY CATEGORY F

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 ( 1.540 M/S)	WIND SPEED CATEGORY 2 ( 3.090 M/S)	WIND SPEED CATEGORY 3 ( 3.950 M/S)	WIND SPEED CATEGORY 4 ( 5.140 M/S)	WIND SPEED CATEGORY 5 ( 8.230 M/S)	W C (1)
.000	.00030500	.00365500	.00479700	.00266500	.00000000	
22.500	.00025400	.00335000	.00190300	.00099000	.00000000	
45.000	.00025400	.00228400	.00312200	.00159900	.00000000	
67.500	.00025400	.00335000	.00540600	.00296900	.00030500	
90.000	.00091400	.00639600	.00966900	.00555800	.00045700	
112.500	.00076100	.00335000	.00327400	.00114200	.00000000	
135.000	.00137000	.00395900	.00266500	.00068500	.00000000	
157.500	.00137000	.00456800	.00305300	.00068500	.00000000	
180.000	.00182700	.00609100	.00662400	.00312200	.00022800	
202.500	.00121800	.00563400	.00619800	.00357800	.00038100	
225.000	.00152300	.00685200	.01076600	.00784200	.00137000	
247.500	.00091400	.00472000	.00772000	.00631900	.00152300	
270.000	.00076100	.00639600	.01000400	.01119200	.00274100	
292.500	.00030500	.00350200	.00464400	.00357800	.00030500	
315.000	.00030500	.00335000	.00464400	.00373100	.00030500	
337.500	.00030500	.00335000	.00434000	.00281700	.00015200	

SUM OF FREQUENCIES, FTOTAL = .99381

\*\*\* ISCLT3 - VERSION 95250 \*\*\*      \*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

\*\*\* THE ANNUAL AVERAGE CONCENTRATION VALUES FOR  
INCLUDING SOURCE(S): 1

\*\*\* DISCRETE CARTESIAN RECEPTOR POI

\*\* CONC OF OTHER IN (MICROGRAMS/CUBIC

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)
-241.00	116.00	.009316	-239.00
-239.00	-45.00	.019247	-239.00
-239.00	35.00	.018958	-239.00
-204.00	-86.00	.013180	-198.00
-169.00	-86.00	.010928	-155.00
-134.00	-86.00	.007475	-112.00
-89.00	-91.00	.003213	-70.00
-69.00	144.00	.006313	-68.00
-45.00	-95.00	.001210	-27.00
-1.00	-99.00	.001800	16.00
43.00	-103.00	.003187	59.00
70.00	-111.00	.005509	97.00
102.00	183.00	.020349	102.00
123.00	-133.00	.011355	142.00
149.00	-146.00	.012918	182.00
184.00	-145.00	.013191	202.00
209.00	-116.00	.013247	215.00
221.00	-31.00	.025667	222.00
227.00	7.00	.032258	223.00
242.00	91.00	.023422	251.00
260.00	181.00	.025157	262.00
264.00	232.00	.025917	-900.00
-900.00	-700.00	.002927	-900.00
-900.00	-500.00	.003943	-900.00
-900.00	-300.00	.005665	-900.00
-900.00	-100.00	.008457	-900.00
-900.00	100.00	.008129	-900.00
-900.00	300.00	.004771	-900.00
-900.00	500.00	.003555	-900.00
-900.00	700.00	.003315	-900.00
-900.00	900.00	.003028	-800.00
-800.00	-700.00	.002913	-800.00
-800.00	-500.00	.004093	-800.00
-800.00	-300.00	.005869	-800.00
-800.00	-100.00	.009370	-800.00
-800.00	100.00	.008947	-800.00
-800.00	300.00	.004738	-800.00
-800.00	500.00	.003946	-800.00
-800.00	700.00	.003616	-800.00
-800.00	900.00	.003270	-700.00

\*\*\* ISCLT3 - VERSION 95250 \*\*\*     \*\*\* Fort Wayne Reclamation Site, 30 ft stack

\*\*\*

\*\*\* MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

\*\*\* THE ANNUAL AVERAGE CONCENTRATION VALUES FOR  
INCLUDING SOURCE(S): 1

\*\*\* DISCRETE CARTESIAN RECEPTOR POI

\*\* CONC OF OTHER IN (MICROGRAMS/CUBIC

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)
-700.00	-700.00	.002837	-700.00
-700.00	-500.00	.004189	-700.00
-700.00	-300.00	.006057	-700.00
-700.00	-100.00	.010420	-700.00
-700.00	100.00	.009859	-700.00
-700.00	300.00	.004724	-700.00
-700.00	500.00	.004397	-700.00
-700.00	700.00	.003949	-700.00
-700.00	900.00	.003527	-600.00
-600.00	-700.00	.003036	-600.00
-600.00	-500.00	.004188	-600.00
-600.00	-300.00	.006458	-600.00
-600.00	-100.00	.011580	-600.00
-600.00	100.00	.010808	-600.00
-600.00	300.00	.005380	-600.00
-600.00	500.00	.004911	-600.00
-600.00	300.00	.005380	-600.00
-600.00	600.00	.004621	-600.00
-600.00	800.00	.004060	-600.00
-500.00	-800.00	.002900	-500.00
-500.00	-600.00	.003601	-500.00
-500.00	-400.00	.005218	-500.00
-500.00	-200.00	.008743	-500.00
-500.00	.00	.017213	-500.00
-500.00	200.00	.006715	-500.00
-500.00	400.00	.005846	-500.00
-500.00	200.00	.006715	-500.00
-500.00	200.00	.006715	-500.00
-500.00	400.00	.005846	-500.00
-500.00	600.00	.005127	-500.00
-500.00	800.00	.004408	-500.00
-400.00	-800.00	.003025	-400.00
-400.00	-600.00	.003835	-400.00
-400.00	-400.00	.004952	-400.00
-400.00	-200.00	.009255	-400.00
-400.00	.00	.020561	-400.00
-400.00	200.00	.007474	-400.00
-400.00	400.00	.006624	-400.00
-400.00	600.00	.005677	-400.00
-400.00	800.00	.004765	-400.00

\*\*\* ISCLT3 - VERSION 95250 \*\*\*      \*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC RURAL FLAT      DFAULT

\*\*\* THE ANNUAL AVERAGE CONCENTRATION VALUES FOR  
INCLUDING SOURCE(S): 1

\*\*\* DISCRETE CARTESIAN RECEPTOR POI

\*\* CONC OF OTHER IN (MICROGRAMS/CUBIC

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)
-300.00	-800.00	.003316	-300.00
-300.00	-600.00	.004027	-300.00
-300.00	-400.00	.005368	-300.00
-300.00	-200.00	.009348	-300.00
-300.00	.00	.024357	-300.00
-300.00	200.00	.008639	-300.00
-300.00	400.00	.007534	-300.00
-300.00	600.00	.006251	-300.00
-300.00	800.00	.005392	-300.00
-200.00	-800.00	.004059	-200.00
-200.00	-600.00	.004703	-200.00
-200.00	-400.00	.005696	-200.00
-200.00	-200.00	.007920	-200.00
-200.00	.00	.023386	-200.00
-200.00	200.00	.009527	-200.00
-200.00	400.00	.008564	-200.00
-200.00	600.00	.007572	-200.00
-200.00	800.00	.006679	-200.00
-100.00	-800.00	.004824	-100.00
-100.00	-600.00	.006024	-100.00
-100.00	-400.00	.007492	-100.00
-100.00	-200.00	.007056	-100.00
-100.00	.00	.004122	-100.00
-100.00	200.00	.009661	-100.00
-100.00	400.00	.011791	-100.00
-100.00	600.00	.009842	-100.00
-100.00	800.00	.008017	-100.00
.00	-800.00	.005559	.00
.00	-600.00	.007343	.00
.00	-400.00	.010323	.00
.00	-200.00	.011686	.00
.00	-200.00	.011686	.00
.00	.00	.000000	.00
.00	200.00	.017497	.00
.00	400.00	.016600	.00
.00	600.00	.012147	.00
.00	800.00	.009317	.00
100.00	-800.00	.005428	100.00
100.00	-600.00	.007086	100.00
100.00	-400.00	.009733	100.00

\*\*\* ISCLT3 - VERSION 95250 \*\*\*      \*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC RURAL FLAT      DFAULT

\*\*\* THE ANNUAL AVERAGE CONCENTRATION VALUES FOR  
INCLUDING SOURCE(S): 1 ,

\*\*\* DISCRETE CARTESIAN RECEPTOR POI

\*\* CONC OF OTHER IN (MICROGRAMS/CUBIC

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)
100.00	-200.00	.011923	100.00
100.00	.00	.007042	100.00
100.00	200.00	.019802	100.00
100.00	400.00	.015498	100.00
100.00	600.00	.011588	100.00
100.00	800.00	.009006	100.00
200.00	-800.00	.005219	200.00
200.00	-600.00	.006699	200.00
200.00	-400.00	.009144	200.00
200.00	-200.00	.013223	200.00
200.00	.00	.031916	200.00
200.00	200.00	.030070	200.00
200.00	400.00	.015798	200.00
200.00	600.00	.010848	200.00
200.00	800.00	.008577	200.00
300.00	-800.00	.004950	300.00
300.00	-600.00	.006397	300.00
300.00	-400.00	.008718	300.00
300.00	-200.00	.011626	300.00
300.00	.00	.031605	300.00
300.00	200.00	.023039	300.00
300.00	400.00	.018028	300.00
300.00	600.00	.011207	300.00
300.00	800.00	.008063	300.00
400.00	-800.00	.004780	400.00
400.00	-600.00	.006156	400.00
400.00	-400.00	.006156	400.00
400.00	-200.00	.008112	400.00
400.00	.00	.009952	400.00
400.00	200.00	.026241	400.00
400.00	400.00	.017838	400.00
400.00	600.00	.018785	400.00
400.00	800.00	.012226	400.00
500.00	-800.00	.008431	500.00
500.00	-600.00	.004623	500.00
500.00	-400.00	.005829	500.00
500.00	-200.00	.007239	500.00
500.00	.00	.008877	500.00
500.00	200.00	.021792	500.00
500.00		.014526	500.00

\*\*\* ISCLT3 - VERSION 95250 \*\*\*      \*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC RURAL FLAT      DFAULT

\*\*\* THE ANNUAL AVERAGE CONCENTRATION      VALUES FOR  
INCLUDING SOURCE(S): 1 ,

\*\*\* DISCRETE CARTESIAN RECEPTOR POI

\*\* CONC OF OTHER      IN (MICROGRAMS/CUBIC

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)
500.00	400.00	.015504	500.00
500.00	600.00	.012684	500.00
500.00	800.00	.008978	500.00
600.00	-800.00	.004424	600.00
600.00	-600.00	.005460	600.00
600.00	-400.00	.006470	600.00
600.00	-200.00	.009191	600.00
600.00	.00	.018475	600.00
600.00	200.00	.013327	600.00
600.00	400.00	.012965	600.00
600.00	600.00	.012726	600.00
600.00	800.00	.009268	600.00
700.00	-700.00	.004617	700.00
700.00	-500.00	.005398	700.00
700.00	-300.00	.006136	700.00
700.00	-100.00	.012475	700.00
700.00	100.00	.014116	700.00
700.00	300.00	.010481	700.00
700.00	500.00	.011119	700.00
700.00	700.00	.010780	700.00
700.00	900.00	.008193	800.00
800.00	-500.00	.004892	800.00
800.00	-300.00	.006101	800.00
800.00	-100.00	.011270	800.00
800.00	100.00	.012533	800.00
800.00	300.00	.009528	800.00
800.00	500.00	.009592	800.00
800.00	700.00	.009529	800.00
900.00	-300.00	.006089	900.00
900.00	-100.00	.010204	900.00
900.00	100.00	.011200	900.00
900.00	300.00	.008836	900.00
900.00	500.00	.008345	900.00